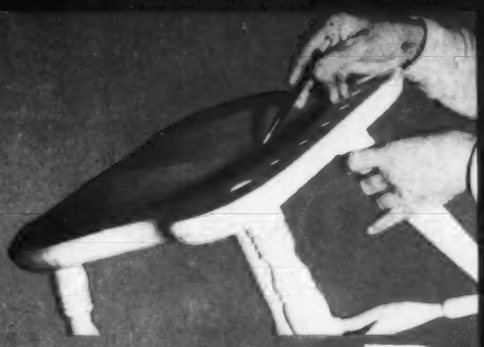
FIFTY CENTS

New Abrasive Belt Lasts Longer

Hardboard Specifications

Designer of the Month



JUNE 1960

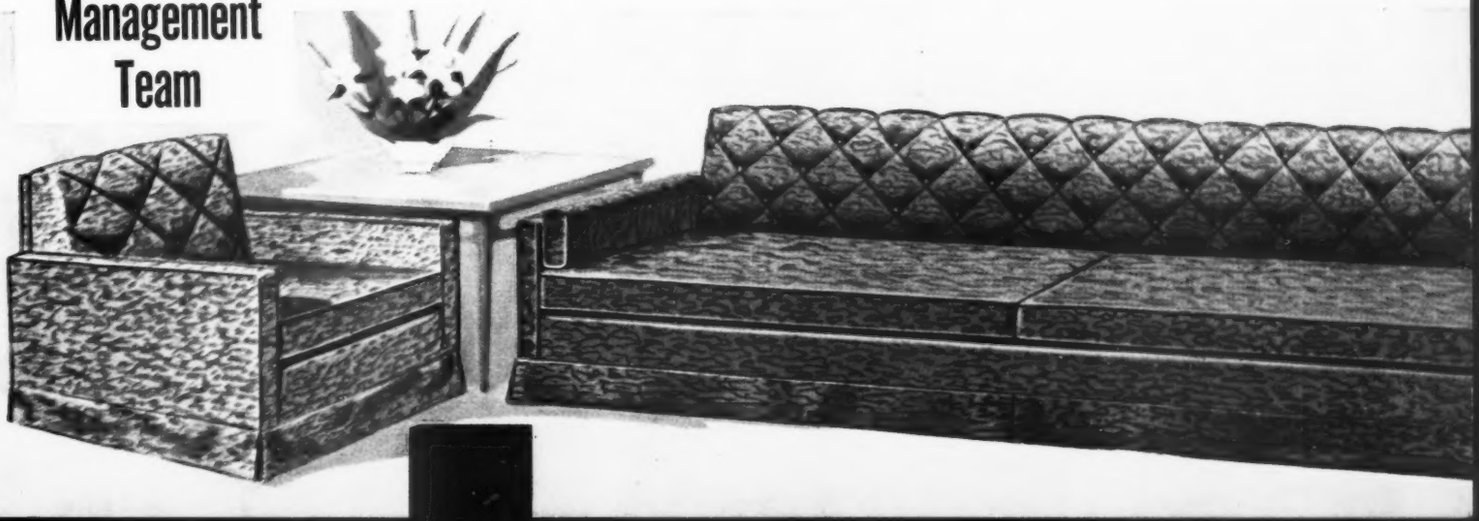
Controls for Effective Management, Part 2

Practical Publicity Guide

Furniture Engineering

Furniture Design & Manufacturing

International's Management Team

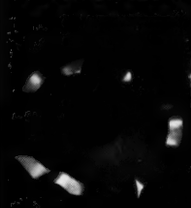


SPECIAL-PURPOSE FURNITURE FASTENERS

and self-fastening devices

The fasteners and other devices shown here are designed for two principal purposes ... to speed in-plant assembly operations ... or to make possible K-D shipment of furniture for assembly by unskilled store personnel or by the ultimate purchaser. United-Carr has pioneered in the field of fasteners specially designed for furniture production and, if you have a volume production problem that requires fasteners of a new or special design, United-Carr's engineering staff is at your service.

LEG LOCK

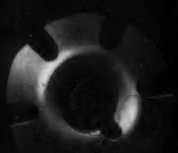


Allows accurate alignment of square legs on K-D furniture for the first time. Prongs dig into both leg and table top or chair seat, lock securely yet permit adjustment during locking action. Write for details and samples.

LOW COST FERRULE GLIDE

Designed for tubular furniture. Steel shell is plated with gloss-finish brass. Durable plastic base swivels, tilts, glides smoothly. Attachment is by spring steel clip.

HELIX WASHERS



Provide positive anchorage for bolt or threaded rod in metal tubing ... push in easily ... can be removed only with substantial force ... ideal for attaching handles or other tubular components. Available to fit wide range of thread and tubing sizes.

CAPPED RATCHET PLATES

Decorative hub caps for furniture and wheel goods ... eliminate nuts and cotter pins. Available in range of sizes, light or heavy action for push-on or hammered assembly ... aluminum or nickel-plated caps. Can be embossed with special designs.

PLUG BUTTON GLIDE

Snaps into tube ends as decorative closure or trim piece ... can also be used as ultra-low cost glide. Chrome-plated steel ensures durability. Spring steel fingers ensure secure attachment.

SUPER SILENT SWIVEL GLIDE

Floats on rubber, slides on steel base, completely insulated from chair or table by rubber cushion. Teeth hold glide in tubular metal legs. Swivel base allows glide to stand flat even though legs slope. Also available without swivel feature.

SUPER SILENT SWIVEL GLIDE

Same construction as round-based glide at left but conical configuration harmonizes better with some modern furniture styles and is ideal for use on school furniture.

LONG PRONG TEENUT

Has curved prongs that provide twisting action for extra holding power as Teenut is driven into bored hole. Components can be repeatedly assembled and disassembled ... provides steel threads in wood ... permits K-D shipment.

SHORT PRONG TEENUT

Can be held in place with brads until final attachment of components by dealer or purchaser. Short prongs prevent turning when hanger bolt is tightened. More than 600 different Teenut designs available to suit your particular requirements.

PETAL NUT

Low cost blind fastener for wood furniture. Easily driven into ⅜" x ⅝" hole with hammer and simple driving tool. ¼, 20 size withstands 1400 lbs. direct pull in face grain oak.

MAKERS OF DOT FASTENERS

CARR FASTENER COMPANY

Division of UNITED-CARR Fastener Corp., Cambridge 42, Mass.

In Canada · Gage Avenue and Beach Road, Hamilton, Ontario

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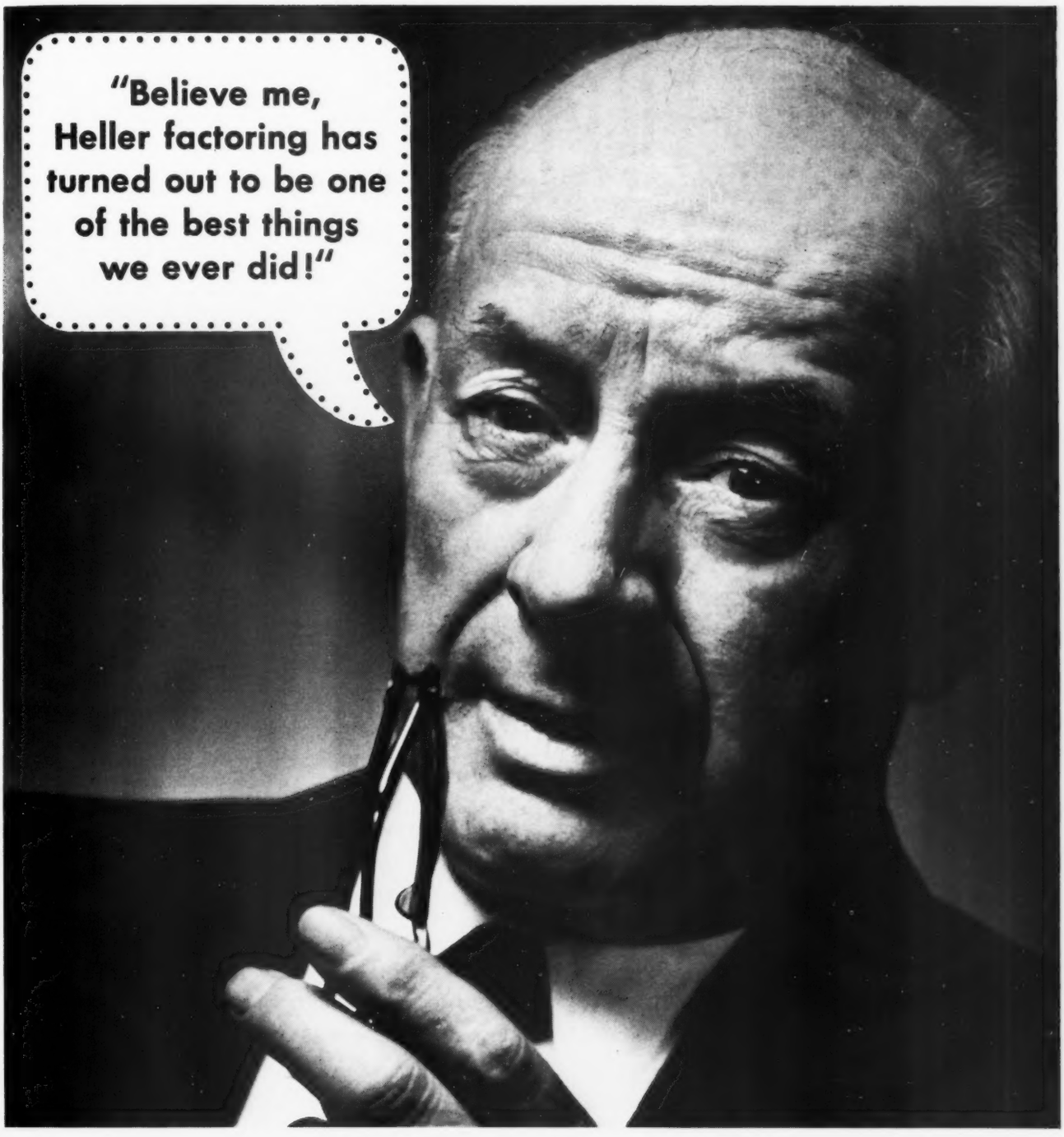

. . . Our principals now devote full time creatively to advancing the business, selling more, making more profits.

. . . No long wait for our money between buying materials, manufacturing, shipping, and eventual collection. Instead, cash-in-hand on every sale, cash for timely buying, for leveling production, for improving our competitive position.

. . . Just one account receivable, and due from Heller—not ledgers full of accounts. No credit and collection bother and expense. No bad debts.

. . . And Heller service is personal and immediate as if Heller were part of our own company . . .

You ought to know about Heller factoring. Just write for our informative booklet, "Profit through Factoring." No obligation, of course.

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FOR DATA CIRCLE FDM NO. 1154

EDITORIAL

This trip IS necessary

"Is this trip necessary?" was a slogan employed during World War II to discourage unessential travel.

In the interests of business economy, particularly management's time, we in the furniture industry must frequently ask ourselves the same question. With more and more markets in more and more places, plus other industry meetings, today's executive would be able to see his factory only on rare occasions if he attended all of them.

However, we would like to point out one trip of vital importance to you and your key men . . . your management, design, production and purchasing executives.

The NAFM Supply, Equipment & Fabric Fair, held each year at Chicago, is the only industry-wide event staged especially for you. Suppliers go all out to show their latest developments in equipment, supplies, materials and services.

The Fair is timed each year so as not to interfere with markets or other industry meetings. Exhibits are arranged to demonstrate and display a wide variety of products and services you need for making furniture. Suppliers bring in their technical people to help you with your design, engineering and production problems.

While attending this exposition you are not occupied with your customers and their problems (as you are during the markets). You are away from the immediate details of the factory. You are free to devote your time to design development and product planning. You can think objectively and take steps to improve your company's profits during the months ahead.

The ideas you will find here can be in operation by the January markets . . . some even before the October showings.

Over 100 important suppliers will be at their best to be of service to you, showing in some 130 display spaces. No matter what type of furniture you manufacture or design . . . for household, office, business of professional use . . . you will find a gold mine of ideas and information here.

Every furniture manufacturer, everywhere, is welcome to attend the NAFM Supply, Equipment & Fabric Fair. The event is sponsored by the National Association of Furniture Manufacturers and is held in conjunction with its annual convention.

Mark this date on your calendar: August 27-30.

This trip is *indeed* necessary . . . for your company's future in the rapidly-advancing furniture manufacturing industry.

R. A. Helmers, Editor

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OUR COLOR COVER—"Moderna" collection by International Furniture is a versatile group of sectional units, sofas and chairs with distinctive detail treatments. Story on page 12.

INSET—Saddle seat sanding problem solved by use of new abrasive. See page 56.

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VOLUME 32 NUMBER 6

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Contents

TEAMWORK ASSURES PROFITS
by David LePage, Associate Editor
How modern management methods work for International Furniture.....12

ESSENTIAL CONTROLS FOR EFFECTIVE MANAGEMENT—*by Spencer A. Tucker*
Part 2 of a new management system for evaluating information.....18

GOULD: "I AM A DESIGN REACTIONARY!" —*by Carolyn Knuemann*
Profile of "Designer of the Month".....22

MANAGEMENT'S GUIDE TO PRACTICAL PUBLICITY—*by Helen Williams*
How, when and where to get more publicity for your product.....26

EUROPEAN WOODWORKING MACHINERY TO BE SHOWN AT NAFM FAIR
Advance report of industry suppliers' exposition.....32

WHAT ARE THE 1960 OBJECTIVES OF THE UNITED FURNITURE WORKERS?
—*by David LePage, Associate Editor*
Exclusive report on plans of an industry labor union.....34

AIR TOOLS SPEED UP FURNITURE CONSTRUCTION—*by Leonard S. Simon, Upholstery Construction Editor*
Automatic Power Stapling Equipment—Part 4.....49

FURNITURE ENGINEERING.....51

HOW YOUR COMPANY CAN CUT SANDING COSTS
Worthwhile tips for your sanding departments.....52

WOOD TECH: TREES FOR FURNITURE PART II —*by Carl A. Rishell*
More about furniture's most important material—wood.....54

NEW ABRASIVE INCREASES BELT LIFE 100 PERCENT
Case history of saddle seat sanding operation.....56

ELECTROSTATIC SPRAYER WRAPS UP QUALITY, ECONOMY
Metal furniture manufacturer reduces waste of finishing materials.....58

DRYING OVENS REDUCE FINISHING COSTS
Case history of a finish drying operation.....60

FACTS YOU SHOULD KNOW ABOUT HARDBOARD
New nomenclature and specifications by American Hardboard Association..61

DEPARTMENTS

• EDITORIAL 4
• MANAGEMENT DIGEST.. 6
• FUTURE DATES.....24
• IT'S NEW.....40
• FURNITURE ENGINEERING 51
• CLASSIFIED 65

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FDM
FURNITURE DIGEST FOR MANAGEMENT

For more complete information on any of the Bulletins below, just circle the Bulletin Numbers on the READER SERVICE CARD which you will find elsewhere in this issue. A copy of the source material will be sent to you promptly.

Management Notes

"GREATER MILWAUKEE SHOPPING HABITS", a publication released by *The Milwaukee Journal,* shows a four-year trend of where families shop related to where they live. Maps show community income patterns and other market characteristics. Results were derived from a 6,459-family sample. *Bulletin No. J-138.*

BUSINESS-BUILDING SERVICES offered by the German-American Chamber of Commerce are described in the booklet, "Introducing the German American Chamber of Commerce." It describes the aims and functions of the Chamber, as well as its publications program. Available on request. *Bulletin No. J-139.*

"THE BRIDAL MARKET," a round-up of data on the market created by newlyweds, has been published by *Batten, Barton, Durstine and Osborn, Inc.* "Beginning in 1965," the survey reports, "the number of marriages in this country will increase rapidly and will total close to 2,250,000 each year. This increase will account for a surging demand (about $15,000 worth in each marriage) for apartments, houses, furniture, appliances, clothing, jewelry, automobiles, and a myriad of other items." The agency reports that marriages will increase 59% in the next 15 years, and confirms that the average marriage age in the U. S. is lower than ever before, with 32% of women marrying for the first time in their teens. Copies of the report are available at $3 each.

WOODWORKING MACHINERY MANUFACTURERS ASSOCIATION reelected *Leslie H. Geddes* president at its 60th annual meeting in Southern Pines, N. C. Geddes is the executive vice president and treasurer of Greenlee Brothers & Co., Rockford, Ill. Other officers also reelected are, vice president: *K. J. Heinzelman,* president of Union Tool Corp., Warsaw, Ind.; secretary: *Ray C. DuBrucq,* Rockwell Mfg. Co., Pittsburgh, Pa.; and treasurer: *F. G. Walker,* president of Jones Superior Machine Co.

HARDWOOD DIMENSION MANUFACTURERS ASSOCIATION continued its policy of the free exchange of production techniques with a plant inspection tour of HDMA members in Arkansas. Fifty-three men from 21 member plants toured the plants of *E. L. Bruce Co.,* Little Rock, Ark., and *Bradley-Southern Division, Potlatch Forests, Inc.,* Warren, Ark.

Supplier Announcements

TEXTILE IMPROVEMENT products, processes, and new materials are covered in a series of brochures published by the *B. F. Goodrich Chemical Co.* Titles are, "Time for a New Look at New Materials," "Back Coatings for Upholstery and Drapery Fabrics," "Stitchless Seams," "Limiting Penetration of Fabric Coatings with Carbopol 934," "After treatment with Hycar Latex for Crack Reduction," "Hycar 1571 as a Binder for Non-woven Fabrics," "Veil Spraying," "Non-woven Fabrics and Their Market," "Washable and Dry Cleanable Non-woven Fabrics," "Geon Latex 576 as a Binder for Non-woven Fabrics," "Products for Textile Improvement," and "Heat Sealable Non-Woven Fabrics."

CHEMSTRAND CORP. has begun an extensive promotion on behalf of upholstery fabrics of Acrilan acrylic fiber. Ads in three national consumer magazines kicked off the campaign, and follow-ups include retail merchandising aids such as hang tags for furniture pieces and labels attached to swatch book fabrics.

THE DU PONT COMPANY appointed six regional distributors for "Dacron" polyester fiberfill batting. They include *Atlantic Excelsior Co., Inc.* (New York State); *American Excelsior Corp.* (Midwest); *John L. Showalter Co.* (Midwest); *La France Industries, Inc.* (Eastern Seaboard); and *Rogers Foam Rubber Co., Inc.* (New England). *Van Waters & Rogers,* present West Coast distributor, will add the Louisiana-Texas area. All six will warehouse "Dacron" fiberfill in both sewn and unsewn batting form.

PLYMOUTH RUBBER CO., Canton, Mass. has appointed *Penn Upholstery Supply Co.,* 439 N. Second St., Philadelphia, Pa., a distributor of Elastic Plyhide. The firm will carry 12 individual patterns, in a number of weights and colors. Plymouth also named *James May Organization, Inc.* as consultants on the design of a new dinette and novelty line.

SUPER SAGLESS CORP. OF NEW JERSEY recently announced the establishment of a spring manufacturing division in High Point, N. C., under the managership of *Lou Tubek. Ed Saunders* is sales manager. The firm also established a North Carolina corporate division with *Alex Katz* as president, *Allen Bank,* vice president, and *L. Abrams,* secretary.

CONE MILLS CORP. purchased a major interest in a new company which will manufacture polyurethane foam for the furniture and rug industries. *Olympic Chemical Co.* will build a plant somewhere in the Piedmont area of North Carolina. It will be headed by *Robert W. Ward,* formerly with *National Oil Production Co.,* Harrison, N. J. About 25 workers will be hired initially, Ward said; the total number will be determined by the method of distribution chosen. The plant is part of a diversification program begun by Cone a year and a half ago when it acquired an interest in the *Otto B. May Co.* of Newark, N. J., a manufacturer of dyestuffs and chemicals.

RAINBOW TRADING CO., New York City, recently appointed four new sales representatives. *Fibersales Corp.,* 1204 Lincoln Rd., High Point, N. C., will cover North and South Carolina, Virginia, Georgia, Tennessee, Alabama

TO PAGE 8

A Versatile New Hard Board for American Industry

About June 1st, the first Bowater Board will come from Bowater Board Company's new air-process mill in Catawba, South Carolina. □ For over thirty years, Bowaters has manufactured hard Board in Great Britain and Ireland, and is one of the world's leading producers of forest products. □ Bowater Board is manufactured by the revolutionary air process, which results in a smooth-on-both-sides finish. The air process also makes it possible to produce Board tailored more exactly to your requirements, with a broad range of thicknesses and densities, and available in a light color. □ Bowater Board offers these and many other advantages, and yet it is competitively priced. □ Bowater Board Company — the only manufacturer of hard Board on the East Coast — is located in South Carolina near the North Carolina border. Its annual capacity of 160,000,000 square feet and its location make it the ideal source of hard Board for customers east of the Mississippi. This competitively-priced hard Board will be shipped rapidly—via truck to nearby states, enabling customers to keep inventory at a minimum. □ Bowater Board Company welcomes your inquiries, and looks forward to serving you.

BOWATER BOARD COMPANY • CATAWBA, S. C. • PHONE: ROCK HILL, S. C. 328-0131 • A MEMBER OF THE BOWATER ORGANIZATION

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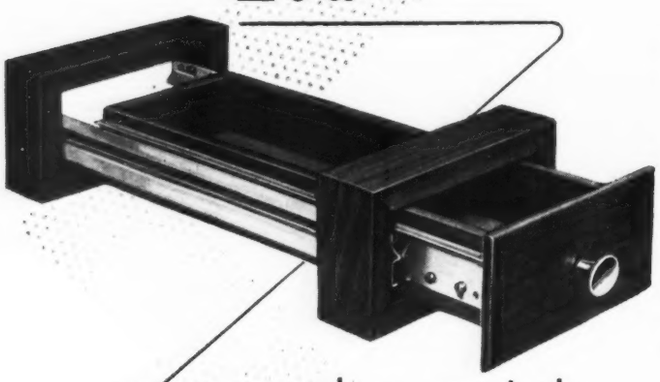
NEW Low Price!



✲ on nylon metal Drawer Slide

A NEW Drawer Slide with Nylon rollers fitted to strong steel rails. Designed for easy installation, quiet smooth running and low cost. Successfully used by some of the largest furniture manufacturers.

COMPARE THE FEATURES!!

- **Easily and quickly installed**
- **Smooth, quiet running**
- **Made to close tolerances**
- **No center guides or dust partitions needed**
- **No metal to metal contact . . . Nylon rollers are quiet**
- **No sticking drawers, even in humid weather**
- **Tracks are plated steel for extra durability**
- **No countersinking of holes**
- **LOW LOW COST**

Drawer Slides are carried in stock for immediate shipment in sizes: 12″-14″-16″-18″-20″-22″-24″-26″-28″. **Write, Wire or Telephone for prices.**

trend industries
2910 West Carroll Avenue
Chicago 12, Illinois

FOR DATA CIRCLE **FDM** NO. 1176

CONTINUED FROM PAGE 6

and parts of Mississippi. *Bill Seydel*, Space 1912, American Furniture Mart, Chicago, will cover Indiana, Illinois, Wisconsin and Kentucky. *Peter De Vries Associates*, 653 SE Gladstone, Grand Rapids, Mich., will cover Michigan and Ohio. *Joe Gross*, Moorestown, N. J., will represent the firm in New England, New York, New Jersey, Pennsylvania, Delaware and Maryland.

MONITE WATERPROOF GLUE CO., Minneapolis, woodworking glue supplier, has appointed *Poston Warehouse, Inc.*, Memphis, as distributor.

BILL GALLIEN & ASSOCIATES, national representative for *Riggs Sales Company* and *H. W. Hull & Sons*, and representative in the West for *Wilkenson* and *Pan-American Metal Products*, has moved its offices from Gardena to 23417 Califa Street, Woodland Hills, California.

ARMOUR ALLIANCE INDUSTRIES, a division of Armour & Co., has entered the field of flexible polyurethane foam manufacture, according to an announcement by *Carl B. Johnson*, general manager. He said an addition to the firm's Los Angeles plant is designed to handle initial foam production, and further decentralized plants are now under study. The Los Angeles operation has a production capacity of 4,000 pounds of foam an hour, and uses the "one-shot" process.

COURTAULDS (ALABAMA) INC. announced the appointment of *Norman C. Casey*, formerly with *Hess Goldsmith*, a division of *Burlington Industries*, as merchandising manager for home furnishings and *William E. Totten* as advertising manager. They will be on the staff of *Homer M. Carter, Jr.*, marketing and merchandising manager.

HEWITT-ROBINS, INC., appointed *W. C. Gilbertson* sales manager of the foam products division, with full responsibility for sales of all urethane and rubber foam cushioning materials. *C. A. Maher* was named assistant sales manager. Gilbertson will be located at the Hewitt-Robins offices in Stamford, Conn., and Maher will be at the urethane foam plant in Franklin, N. J.

F. BURKART MFG. CO. announces that hereafter its polyurethane upholstery material, Burkart Foam, will be shipped directly to furniture and bedding manufacturers, already

cut and trimmed for installation. It was previously shipped in bulk to jobbers, and they or the manufacturer had to cut and trim to size.

TO PAGE 39

NEW STYLE 34 SWIV-L-GLIDE

- Newly designed plastic base
- Sleek, all new modern lines
- Arrowhead's special high luster finish
- Extra value at low cost

It's designed for the designer . . . to sell at low cost. New, larger looking plastic base has protective edging for built-in shroud. This low neck with positive swivel action base is available in most any color. Shrouds and ferrules have greatly improved resistance, a lasting finish for any climate and all weather conditions. There is a choice of ferrules from ½″ to 1″ tubing, 9/16″ to 1″ high. Tapered ferrules are available for the wood industry.

Arrowhead Associates

383 E. MAIN ST. MERIDEN, CONN.

ARROWHEAD ASSOCIATES
383 E. Main Street, Meriden, Conn.

Please quote.....quantity,.....size

Name.....

Company.....

Address.....

City.....Zone.....State.....

FOR DATA CIRCLE FDM NO. 1137

There's a new plump look in B.F.Goodrich Texfoam

—and in the Texfoam consumer ad schedule!

Well Rounded! To catch a huge audience of furniture prospects, the new B.F.Goodrich Texfoam extended ad schedule includes three of America's largest circulation consumer magazines—*Look, The Saturday Evening Post,* and *Better Homes and Gardens!*

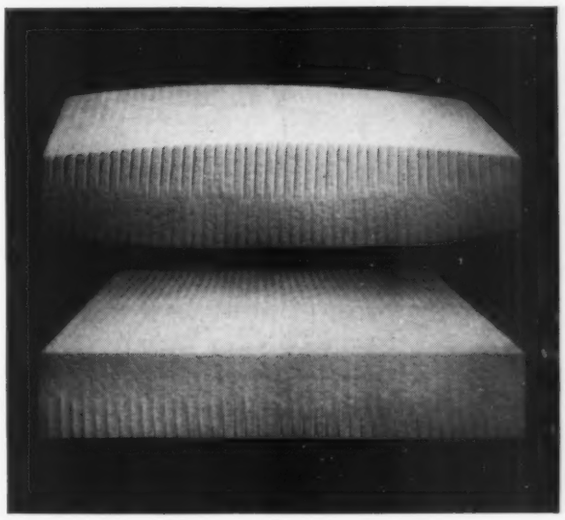
No corners cut! All ads, all through the year, are full pages in full color with real sales information and interest to your customers. Plan to cash-in on this extensive national advertising. Be sure your customers know you use this superior BFG cushioning!

Furniture looks better, feels better with BFG Ventifoam!

Now there's a Plump Look in foam rubber furniture cushioning created exclusively by BFG's new crowned Ventifoam. Both this new crowned Ventifoam and standard straight contour Ventifoam consistently offer more to furniture manufacturers and retailers.

Uniform compression resistance makes tailoring easier, keeps welt lines in place. Springiness lasts only as it can in the finest genuine latex foam. Every Ventifoam cushion delivers the exact feel you specify—controlled compression guarantees it! And 521 tiny cores per square foot make Ventifoam the *coolest* foam around.

For full information write: The B.F.Goodrich Company, 10 Derby Place, Shelton, Connecticut. Don't wait—do it today!



B.F.Goodrich **Texfoam cushioning**

FOR DATA CIRCLE FDM NO. 1151

Teamwork Assures

Modern management through delegation of responsibility helps International Furniture achieve its objective: individualized quality at a moderate price.

ROBERT GERA, vice president in charge of design explains company philosophy and procedures.

IRL WARD, vice president in charge of engineering, tells how International hits price and quality targets.

Profits

By DAVID LePAGE
Associate Editor

Photographs by the author; except photographs of furniture, courtesy International Furniture, Div. of Schnadig Corp.

LAWRENCE SCHNADIG and JOSEPH ZARISH, president and vice president in charge of marketing, respectively, were architects of company's marketing concept.

"BASICANNA" CHAIR features slimmer, styled up lines.

CLAY MODEL, one-half scale, is checked by design head, Gera.

"BASICANNA" upholstery styling, left, coordinates with case goods by Basic-Wall, introduced at April markets.

Like the flashing multiple put-outs of an old Chicago Cub triple threat, "Tinker to Evers to Chance," bold "plays" in furniture marketing are made regularly by a three-man management combination at International Furniture, Division of Schnadig Corp.

The three-ply teamwork that prevails in this complex organization includes Marketing, Design and Engineering. At International, these departments converge on the objective of every single design—individualized quality at a moderate price.

The company's management team is called the Merchandising Committee. Although nobody at International seems to go much for titles, Joseph Zarish, vice president in charge of marketing, may be likened to a chairman, since he works directly under Lawrence Schnadig, president of the parent corporation. His teammates are Robert Gera, vice president in charge of design, and Irl Ward, vice president in charge of manufacturing and engineering. All three serve Schnadig's Karpen Division as well as International.

Their aim is realizing a "marketing concept" which, according to Zarish, works back from the consumer—her needs, desires and demands—in terms of the company's distribution, styling, pricing and manufacturing capacities.

One aspect of the marketing concept is a conviction that an important consumer need today is personalized furniture at a moderate price. The conviction is backed, not by a rag-bag of different styles, which would be hard to offer in a modest price range and within the firm's quality standards, but by integrated groups of pieces which can be combined in a variety of ways, and ordered with a choice of several trim treatments and a host of cover materials and colors.

While market research may be initiated by marketing and sales personnel, the Design department participates from the start. "We sit in on merchandise planning all along the line," said Gera. "We also go shopping at the markets and study what others are doing. We cooperate in the development of specific targets, and when things are beginning to take definite shape, we meet with marketing for a final discussion on design objectives. Following this discussion, my staff enters a sketch time period of two or three weeks, during which we maintain close liaison with marketing," Gera concluded. "Design and Marketing have to be a single team."

The Design department also handles the cover testing program. This is headed by Eddie Stack. Mary Ann Rasmussen, Gera's assistant, does designing and sketching and implements communications between Design and Engineering. Rose Arnoff, Gera's "Girl Friday," coordinates all divisions of his department.

At the sketch period's due date, Design and Marketing sit down with manufacturing for a discussion by the committee as a whole. They agree on the items to be used for the target in mind, approximate the price, construction details, and number of pieces. Ward injects the engineering viewpoint in terms of possibilities of producing the design within the specified price range.

"From there Design carries through a prototype program," Gera said. "We usually start with a half-size model in clay. Our model maker works from sketches and spec sheets. Her models give Marketing a chance to visualize in three dimensions the concepts we have been talking about. When Marketing has reviewed the clay designs and modifications are incorporated,

TO PAGE 14

ENGINEERING PROBLEM is discussed by Gene Byrne, left, director of design development, Clarence Karstens, frame supervisor, and Richard Roe, right, director of manufacturing engineering.

TEAMWORK

FROM PAGE 13

the approved models are photographed. Sketches, spec sheets and photographs are sent to my Design Development staff at the Rushville (Indiana) plant. There, Director Gene Byrne assumes responsibility for the construction of a full size prototype of one piece from each suite."

In Rushville, Byrne carried on: "We are concerned with the development of the product," he said. "After we begin to develop it, the engineering staff here issues material specs to plants and I issue frame and cover information. We make the original frame detail in our sample mill. At first, we try to adapt the design to a current basic frame and materials.

"After the Chicago people review the prototype," Byrne said, "my staff makes all the pieces for an entire suite or group. Then we make master frame patterns and enough samples for market requirements. We usually average 50 pieces per market, for each city.

"I usually attend the meeting in Chicago where the clay models are discussed," he added. "After the market samples are made, we send the other plants master patterns of the complete frame's components, plus blueprints, stockbills, perforated patterns, marking and cutting patterns for various filling materials, upholstering patterns and markers, and completely dimensioned sketches."

Pre-costing, an important element in the International strategy, enters the picture as soon as the design sketches, photos and specifications arrive in Rushville. Byrnes, in Design, cooperates closely with Ward's lieutenant, R. C. Roe, director of Manufacturing Engineering, as the design staff begins to build the prototype. One of the major aims of the engineering department, according to Ward (who spends a good part of his time in Rushville), is to "have all we do on a completely reproducible basis. We coordinate closely with Design, and try to keep it channeled through existing materials and methods. While the Design Development section begins to interpret the sketches in physical form, in coordination with existing standards, the engineering staff gathers costing and production information from the sketches and specs to work out an advance estimate of the design's cost. We have developed a catalog of components used in the past, whose cost is expressed in terms of both labor and materials. We also rely on comparisons with similar designs already in the company's line. Departures which retain some of the components of previous models are analyzed piece by piece and detail by detail, with comparable segments or details in any of several existing models. This preliminary costing is done several months before a market by Roe, usually assisted by James Coffman, a methods engineer under E. W. Sloan, chief methods and standards engineer. Sloan's sub-division is one of five under Roe; the others are Materials Specifications, Quality Control, Factory Engineering and Research & Development.

The pre-costing findings are relayed to Zarish and James Ryan, head of the Cost department in Chicago. Zarish

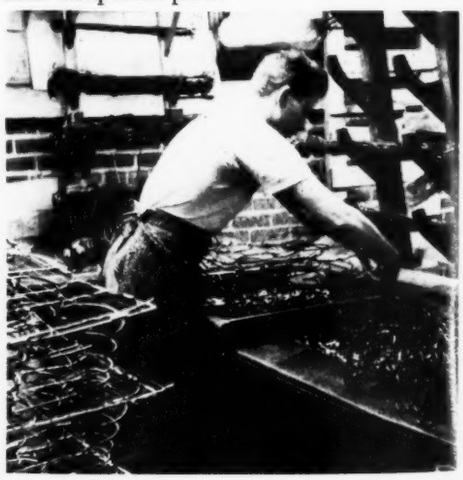
Engineering and D

is then able to predict whether the proposed design is "on target" from an economic standpoint. According to Sloan, the pre-costing estimate is usually within 5 percent of the final cost.

A detailed or engineered costing report is made up on the basis of a study of the prototype as it is completed by Design Development. "Final cost information is available at a final review of the prototype by the Merchandising Committee," Ward said. "If the design is approved, it is introduced into our line. Then Design Development will complete patterns,

PINS PREVENT SHIFTING of cover materials being cut with Eastman machine.

SPRING UNITS are assembled from 13 basic component parts.



Design Development Play Important Roles

and Engineering will supply materials specifications and rates. Labor and material requirements keep up with changing samples, and shortly after the market, final labor rates and material specifications are issued to all five plants. Sloan's department compiles detailed labor costs; materials costs are prepared by A. O. Seright, chief materials and specifications engineer.

"If a part is highly unusual," Ward added, "Engineering will supply a physical piece to each plant."

Actual setting of rates and other cost work on wood parts is done by a separate engineering group at Cornelia, Georgia, one of the world's largest upholstered woodworking mills.

The materials specifications section, headed by Seright, establishes specifications for all components, exclusive of frame and fabric—the size, shape and quantity. Bills of materials are issued for costing and production. According to Roe, this is important because "we make such a broad line—around 600 different frames. It necessitates a material standard program, which, in turn, allows us to keep inventory to a minimum."

Seright's department helps control types of materials used and establish standard manufacturing methods. It also (occasionally in conjunction with Research & Development) works up new material specs for new styles, trying always to correlate in-line materials with new introductions. Research carries on after specs are established; Materials Specifications department determines *what* materials, and Research what *qualities* they shall have.

Methods and Standards, headed by Sloan, is responsible for establishing the most efficient method of manufac-

TO PAGE 16

TUFTED COVER is attached to frame with Senco Model H pneumatic stapler.

ADHESIVE is sprayed prior to tufting.

BOOM SEWING MACHINE by Cooper handles tufting of sofa back.

STAPLER IN JIG attaches Tufflex pads.

TEAMWORK ASSURES PROFITS
FROM PAGE 15

turing consistent with predetermined quality requirements, and establishing incentive standards for all direct and indirect labor operations. Sloan does pre-costing of items in sketch form to aid Design Development in making decisions on whether or not they are on target. His section is also involved in plant layouts. Constant changes are required because of shifting work loads due to new styles. They attempt to foresee this and accomplish a layout change before a new product is ready to go into production.

This section has instituted the Methods Time Measurement system for determining incentive rates and costing, and boasts a 95% incentive coverage of direct labor. Now they are working on increased indirect coverage.

MTM is essential to International's pre-costing procedure. Previously compiled MTM statistics offer a reliable guide to analyzing the amount of time and effort required for each factory operation. Every conceivable motion, gesture, and movement has been assigned a definite value in terms of decimal hours. The tables enable Engineering to forecast labor costs for the production of almost any design. Coupled with an estimate of materials cost, they provide the foundation for accurate pre-costing.

These evaluations are standard in International plants throughout the U.S. Base wage rates, in dollars per hour, are negotiated for each plant separately. The base rate times the number of decimal hours earned by a worker in a day determines his wage.

The Methods Time Measurement system has provided not only a tool to help establish pre-costing but has materially aided in cost controls in the bargain. The application of MTM to furniture manufacture at International was pioneered by Ward, with the aid of outside consultants.

"We issue some 40,000 individual labor rates per year," Sloan said, "so we rely on historical methods used for similar operations, and standard method write-ups which apply for a wide variety of methods. We send out detailed methods descriptions for any new operation, material, or equipment to be used, and have to follow up with a regular policing of these methods.

"We feel that MTM is better than any other system for setting labor rates because it's more consistent," Sloan pointed out. "Most production line people don't *understand* MTM. I conduct MTM courses in our plants. We invite union representatives as well as our foreman and engineers. One union business agent took the full 100 hour course. I think it took the mystery out of it for him; now he knows it's not a question of guesswork. We had an incentive system before, but this is more fair. We've started a couple of departments on a bonus system, instead of an individual incentive, and are starting to establish incentives in truck loading, too."

Back of the material and labor cost data lies a standardization program maintained by three other engineering sub-divisions, Quality Control, Factory Engineering, and Research & Development.

Quality Control is headed by John Hunter. "My job is to establish a corporate quality level and police it," he explained. "I interpret the intent behind the original design and carry out its aesthetics, coordinating individual plant control departments to achieve a product of consistent quality.

TO PAGE 33

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President, Diamond Brothers
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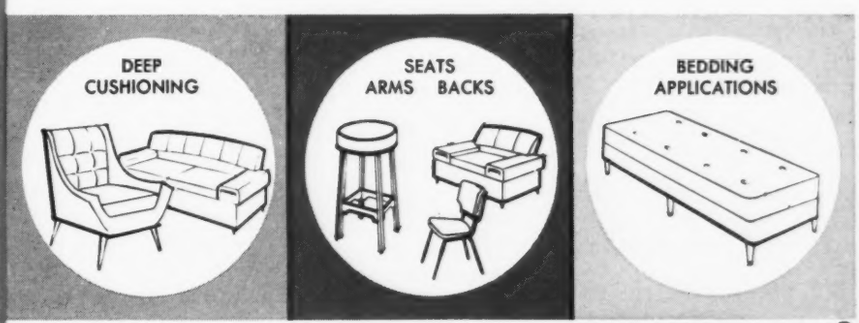

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FOR DATA CIRCLE FDM NO. 1143

Essential Controls For Effective Management*

Will longer production runs increase your profits? Economically-weighted data can give you the answer as explained in this second of four articles.

BY SPENCER A. TUCKER

Partner, Martin & Tucker, Management Consultants, Little Neck, N. Y.

Today, to an extent never before attained, people have great control over what concerns them. They can take pills for keeping awake, for inducing sleep, for decreasing bodily weight, for keeping happy, for improving memory. Unfortunately though, no one has yet invented an oral palliative which will produce optimum and consistent profits and a sound growth path.

The only one who doesn't have to worry about this goal of business enterprise is the man who produces something everyone wants and nobody else can make.

The day has long passed when a manager could make a reasonably safe judgment from the single facts normally available to him. Now harvesting of profits lay in the small areas, which elude management, especially when the focus is on just the end result—the "net profit". How rich in losses that net profit stew can be! Imagine the profit potential available in a company with a *net profit* of $150,000 where $750,000 were gross profits and $600,000 gross losses.

Decisions, Decisions

Operating a business is actually a succession of decision-making. Meaningful data is essential to answer questions of methods, quality control, labor productivity, utilization of machinery, employment of capital, application of sales efforts, cost recovery, etc. Counseling, disciplining, analyzing also depend on decisions. Yet with the ease with which this operation is performed, one might come to regard it as simple, an educated guess, instinctive ability, making the best of the available information, etc.

Decision-making is really a highly complex operation. Just reaching for the salt shaker on the dinner table, for example, is the result of many mental decisions, so thoroughly interrelated that a consistent decision is produced: we have our hand towards the salt shaker. Decision-making in industry must likewise be based on integrated data to produce optimum and consistent results.

Production MC:

The "MC" technique** gives management economically-weighted data to cope with the myriad events normally taking place in all areas of their company. This article deals with establishing ratios with which to evaluate and control production. Evaluation of effort, performances, usage of expenses, etc., are done by means of the ratios themselves. That is, as ratio value changes, so does the evaluation of the area defined by that

TO PAGE 20

Condensed excerpts from the forthcoming book by Spencer A. Tucker, to be published in late 1960 by the McGraw-Hill Book Company. Copyright 1960 by Spencer A. Tucker.

Exhibit 3. Statistical Production Data

DATA TABULATED	CODE IN RATIO
Manufacturing Occupancy	a
Shipments (adjusted for overlap)	b
Machinery Repair Parts & Labor (outside)	c
Dollar Value of Waste Produced in Plant	d
Cost of Returns Rejected from Customers	e
Total Machinery Depreciation in Period	f
Sales, General & Administrative Payroll	g
Total Non-Labor Overhead Expenses in Period	h
Machinery Running Hours	j
Fixed Expense Segment of Total Overhead	k

Exhibit 1. Primary Production Data

DATA TABULATED	CODE IN RATIO Dollars	Hours
Gross Payroll	1	15
Direct Labor:		
On Standard—Earned	2	16
On Standard—Clock	3	17
Off Standard—Clock	4	18
Total Direct Labor	5	19
Indirect Labor:		
Downtime	6	20
Excess Direct Labor	7	21
Maintenance & Repairs	8	22
Salvage & Rework	9	23
Service	10	24
Total Indirect Labor	11	25
Direct-Labor Subsidy (Lost)	12	26
Direct-Incentive Premium (Gained)	13	27
Indirect-Incentive Premium	14	28

Exhibit 2. Elementary Production Ratios

NUMBER	TITLE	FORMULA
I	Gross Productivity Ratio	15 / 17
II	Net Productivity Ratio	17 − 26 − 27 / 17
IV	Performance Index	17 − 26 + 27 / 19
V	Improvement Index	17 − 26 − 27 / 24
VI	Worker-Standards Consistency Ratio	26 / 27
XII	Excess Cost Ratio	2 + 3 + 17
XXXI	Maintenance Effectiveness Index	22 / 15
XXXII	Productivity Planning Index	12 / 5

**Described in previous part.*

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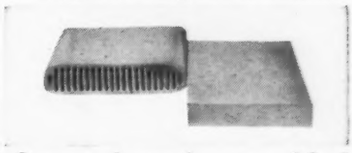

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Exhibit 4. Tertiary Production Ratios

NUMBER	TITLE	FORMULA
F	Non-Labor Expense Prod'y	$\frac{b}{h}$
G	Machinery Economy	$\frac{6+7+8+c}{f}$
J	Productivity-Economy	$\frac{38}{8+9+d}$
M	Incentive Economy	$\frac{13}{7+8+9+12+14+d+e}$
P	Productive Load	$\frac{19}{g+h+(1-5)}$
M'	Machinery Hourly Cost	$\frac{6+7+8+c}{j}$
AA	Performance-Excess Index	$\frac{\text{Ratio IV}}{\text{Ratio XII}}$
LL	Overhead Activity Index	$\left(\frac{10}{5}+\frac{g}{5}+\frac{h}{5}\right)+j$
OO	Fixed Recovery Return	$\frac{b}{19}\left(\frac{j}{20+21+22+23+24}\right)$
QQ	Performance-Overhead Index	$\text{Ratio IV}\left(\frac{16}{g+h}\right)$

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ratio. But what we don't know is how this ratio-change affects *other areas*, which are also under ratio appraisal. To determine the impact of the one-area changes on the larger company segments, we interrelate the movements of the various ratios over a period of time to determine valid trends. This is managerial control.

Basic Data Required:

To construct ratios, the data typical to most factory operations must be made available in organized and consistent form. This involves proper time and production reporting from production, various analyses made from the payroll, statistics on shipments, rejects, etc. Since most of this data stands alone, it is called primary or unrelated data.

Exhibit 1 is a sample of the data extracted from a payroll analysis. Since some of the terms used are too long to handle in formulas, the information is coded and these code designations are used in the actual ratios.

Exhibit 2 shows a number of elementary ratios that were constructed from this data. These ratios are used in the grass-roots evaluation of the production effort and shows how two or more unrelated pieces of current data are each given economic meaning by the presence of the other. The following are brief descriptions of some ratios and how they are used:

Ratio V: Improvement Index

This ratio relates the net earned hours to the total payroll hours to appraise the net effect of the productivity economy on the total payroll. This ratio is valuable for appraising the contribution that the wage incentive plan makes to the factory payroll. It does it without the influence of the full volatility of the direct-labor usage.

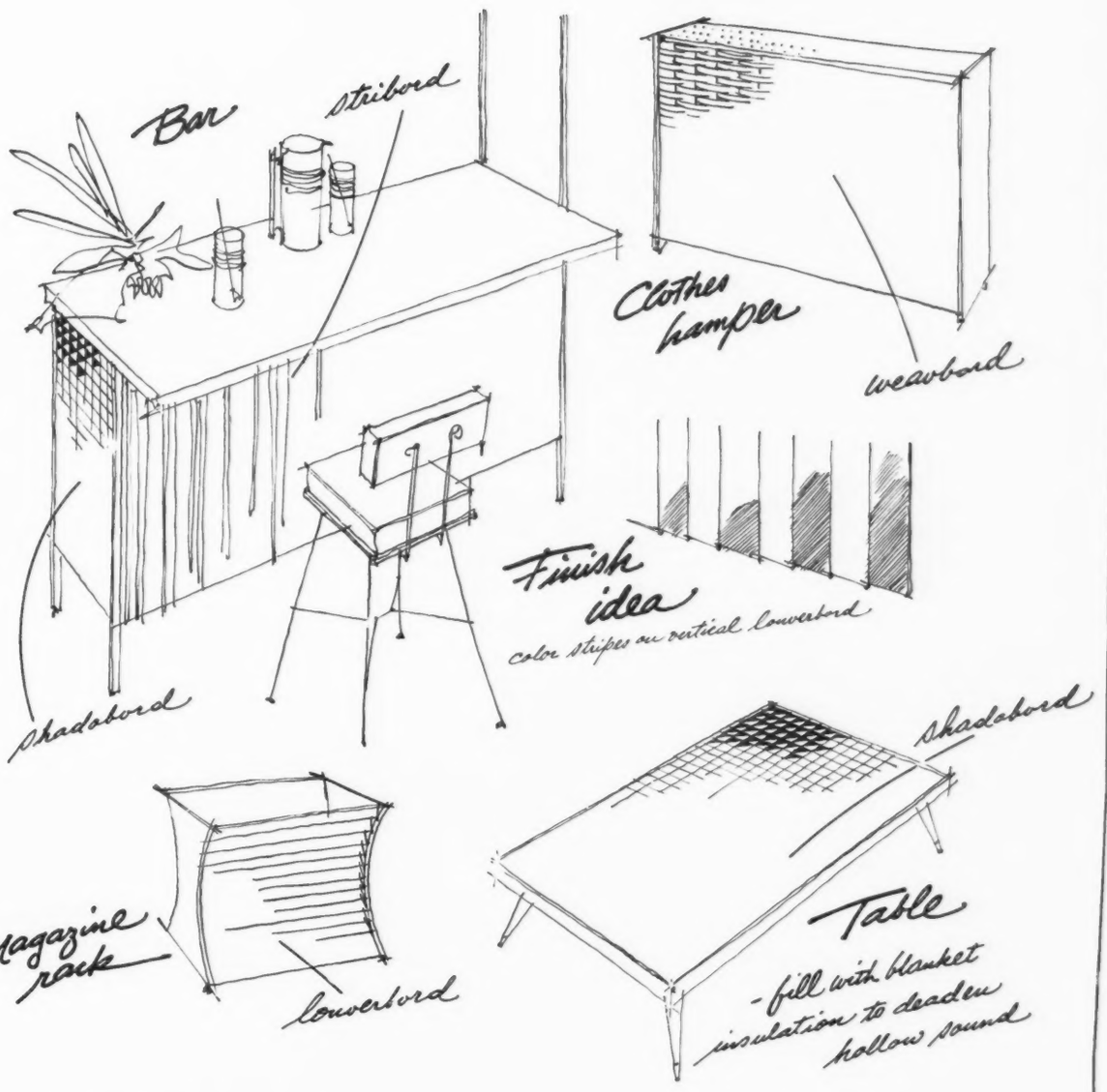
This ratio evaluates the economic balance between net productivity and the level of indirect labor supporting it. When the value of this ratio remains the same with increases in net productivity and incentive coverage, it is usually the result of a proportionate increase in indirect labor which boosts the entire payroll.

Ratio VI: Worker-Standards Consistency Ratio

This ratio compares the "lost" hours with the "gained" hours. It shows by

TO PAGE 36

— from Dave Chapman's sketchbook —



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We asked Dave Chapman, the noted industrial designer, how he would design furniture to take advantage of the unusual visual and tactile appeal of Hines Embossed Hardboards. Above are some of the results.

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FOR DATA CIRCLE FDM NO. 1155

Gould: "I Am a Design

Furniture Designer of the Month defines his approach to successful furniture styling

To create new horizons is a cosmic achievement—in nuclear physics, or in art.

Such is the accomplishment of Allan Gould. In 30 years of pioneering modern furniture design, he has spread the concept of purism into unexplored worlds.

Designing today for such manufacturers as Selig, Thayer Coggin and Westwood, he is a strong force in the American home furnishings industry. As quiet and restrained in person as his products are bold and direct, Gould goes about his dedicated business, a man of convictions.

Said he:

"I'm a design reactionary.

"I still turn to pure elements—to things we're forgetting about now. Important are the functional, the simple, the anti-high fashion, the long-lived. Style is something deep—a 'long-term trend', to use a Wall Street expression.

"With all due respect to the women's magazines and other stimulations, the designer must read through and see through trends. He is concerned with basic development."

In Gould's opinion, light characteristics such as "cute" and "whimsical" are appropriate to two types of products: to handmade, one-of-a-kind pieces; or to pieces related to a specific culture, as Mexican painted chairs.

In other words, he insists on "avoiding gimmicks."

"Good design should be oriented to needs rather than wants," declared Gould. "Preferably, it should combine both. But the sales force today is concerned mainly with wants.

"We should have a gearing up of our whole system of merchandising. The public is receptive to better merchandise. The public is ahead of the stores. The store buyers are the greatest force in holding back the progress of good design."

The role of the designer in 1960 is interpreter of the public's needs and the manufacturer's capacity and position in the field, Gould explained. Many manufacturers lack an identification of their product with a long period of time, although early manufacturers, in the generic meaning of the word, did have this awareness.

As to materials, Gould finds "any good material" desirable to work with, but considers wood "basic." Fibre glass and cast aluminum are "colder and difficult to use." According to Gould, "unfortunately the market is cluttered by a horrible use of many new materials – for example, the plastics."

What can the manufacturer do to keep pace with design? Smaller bedrooms and lower ceilings, as architectural changes, should mean reduced bulk of furniture.

What can the manufacturer do to

ALLAN GOULD, important figure in modern furniture design, considers himself a purist.

Above, right—
"FLARE CHAIR" is the name of this seating unit designed by Gould for Thayer Coggin.

Right—
HIGH BACK lounge chair, manufactured by Thayer Cogign, features walnut exposed wood. Designed by Allan Gould.

Reactionary!"

by Carolyn Knuemann

help put over good design to the public?

"Present it. If it has value, it will go over. Too many guys are just aping the other guy, and by the time it's third-hand, it may be no good.

Modern design has three prime justifications, according to Gould. One is fresh ways of making things. Legs and bases may be detachable for shipping KD. New materials, new techniques, new processes have such results as molded plastic seats and resistance welded wire mesh.

Another justification for modern design is a changing way of living—in dwellings, appliances, transportation —causing different purposes for furniture. Storage for Hifi is an example.

The third raison d'etre is the aesthetic one—"applicable even where there may be no new material or method, or no new way of use, but simply a new visual approach to the design."

Perfectionist Gould has created some modern classics—which, in the words of one industry spokesman, ". . . have been copied almost as much as the Bauhaus chair."

His work in general is advanced in style, restrained in taste, with forthright expression of structure. The furniture, like the man, is intelligent, sincere, pleasing, lofty.

Some current examples are in the

TO PAGE 24

Top—
SMALL, TRIM CHAIR by Gould is from Selig's Masterpiece collection.

Second from top—
"EGGSHELL CHAIR" has gently curved lines like its ancestor. Manufactured by Thayer Coggin.

Bottom—
CORRECT PITCH of seat and back, plus roll and height to the head rest spell comfort in this Selig chair. The seating unit has a balanced appearance on the underslung walnut cradle.

FDM FUTURE DATES FOR MANAGERS

SUMMER FURNITURE MARKET Exhibitor Building Waters Building Grand Rapids, Michigan	**June 16-24**
SUMMER FURNITURE MARKET Dallas Trade Mart Dallas Homefurnishings Mart Dallas, Texas	**June 18-21**
INTERNATIONAL HOME FURNISHINGS MARKET American Furniture Mart Chicago, Illinois	**June 20-25**
INTERNATIONAL HOME FURNISHINGS MARKET Merchandise Mart Chicago, Illinois	**June 20-July 1**
HARDWOODS EXHIBIT INDUSTRY COMMITTEE Tenth Anniversary Banquet Museum of Science and Industry Chicago, Illinois	**June 21**
SUMMER FURNITURE MARKET Northwest Furniture Manufacturers Association Field Artillery Armory Northwest Furniture Mart Seattle, Washington	**June 26-29**
SUMMER FURNITURE MARKET Southern Furniture Exposition Bldg. High Point, North Carolina	**June 27-July 1**
SUMMER FURNITURE MARKET Atlanta Merchandise Mart Atlanta, Georgia	**June 27-July 1**
SUMMER FURNITURE MARKET New York Furniture Exchange New York, New York	**June 27-July 1**
SUMMER FURNITURE MARKET Los Angeles Home Furnishings Mart Los Angeles, California	**July 17-22**
WESTERN SUMMER HOME FURNISHINGS MARKET Western Merchandise Mart San Francisco, California	**July 24-29**
SIXTH ANNUAL FLORIDA FURNITURE MART Miami Beach Exhibition Hall Miami Beach, Florida	**August 17-20**
NATIONAL ASSOCIATION OF FURNITURE MANUFACTURERS Sixth Annual Supply, Equipment and Fabric Fair 32nd Annual Convention Conrad Hilton Hotel Chicago, Illinois	**August 27-30**

DESIGN REACTIONARY
FROM PAGE 23

Masterpiece Collection for Selig. A big masculine lounge chair extends 40 inches high, with wings sloping down to form low arms. The back has a sweeping curve giving a feeling of movement to the seating unit, resting in a walnut cradle. The chair is padded with foam rubber. The back seating is in two sections, to provide a separate head rest.

Another highback chair by Gould, from the same collection, rises 37 inches, and has small rudimentary wings flowing into the arms. A 32-inch lounge chair has a swinging backward pitch, and reversible seat and back cushions. A small, 30-inch chair has trim but flaring lines, and could fit into a living room, bedroom or an office reception room.

Outward-flaring lines and a slight lean-back tilt mark a Masterpiece sofa projecting Gould's theory of beautiful simplicity and movement.

His models for Thayer Coggin include an "Eggshell Chair," a "Hexagonal Flare" Chair, a modern rocker. His novel "Toadstools", for the same company, are a black-white-blue-persimmon quartet looking just like their name, and intended for occasional and recreation room seating. They are manufactured KD for customer assembly, have vinyl seats and bases, and wooden stems enameled to match.

In addition to this spate of creativity for Westwood, Selig and Thayer Coggin, Gould has been modeling up a line of desks, work and conference tables for the architect-decorator line Design Previews, in New York.

Gould has done contract work as well as household, and knows store decorating and furniture manufacturing. Architects and interior designers have consistently bulwarked his avant garde philosophies.

His much published and much exhibited work, internationally, has appeared in the Museum of Modern Art Good Design Exhibits in New York, in the traveling exhibit "20th Century Design, U.S.A.", which last year started at Buffalo's Albright Gallery and reached ten museums throughout the country, and in many other events. His works have been shown in Europe during American exhibits sponsored by the State Department.

A painter before he became a designer, Gould is rather proud of the fact that he has had no formal training in design. He was a Fine Arts major at Dartmouth (". . . really a football week-ends major . . ."), then attended the Art Students League in New York.

For ten years he did chiefly painting, including Post Office murals in Greenville, Ky., and Roxboro, N. C.

During this period, he also became interested in teaching, and began an educational crusade for modern design. He was an original faculty member of the first modern school of design in the U. S.—the Design Laboratory of New York, which exerted a viable if brief influence during the late '30s. Tossing precedent out of the window, the Laboratory devised an original program: no tradition, no history, just work tools, materials and abstract constructions ("All of which I don't approve of entirely today.") The Laboratory was to become guinea pig for Harvard, Pratt, other schools.

Later, Gould taught design at the University of Southern California, at Pratt, and has been visiting critic at the Cornell College of Architecture.

During World War II he served for two years with the U. S. Army Engineer Corps, and participated in the Puerto Rican industrialization program.

At one time he was Assistant Manager of Display at Lord and Taylor in New York.

In architecture, he has designed award-winning homes, such as one in Weston, Conn.

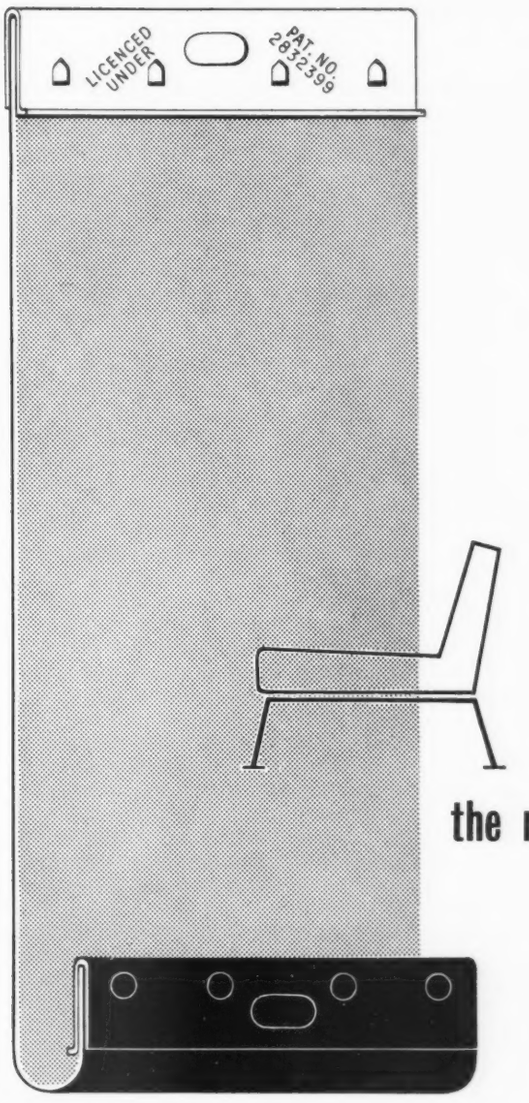
He worked with furnishings in the Manufacturers Trust Company's Fifth Avenue branch, the New York University Law School dormitory, the New Haven State Teachers College library, and the Motel-on-the-Mountain at Suffern, N. Y.

He has worked in graphics design, and machine tool design.

Between 1952 and 1957 he was president of Allan Gould Designs, Inc., which designed and produced furniture for the store, decorator and contract fields.

The Gould studio is located at his homeplace in Scarborough, N. Y., in a woodland setting close to the Hudson River. He does all his own sketching and detailing.

Allan and wife Alice—she's a painter—enjoy good cooking ("Spanish, Armenian, Scandinavian and French foods"), gardening, reading, and a host of friends.—*Carolyn Knuemann.*



the muscles of modern furniture

PIRELLI

RESILIENT WEBBING

- **LABOUR SAVING**—assembled in seconds by unskilled labour
- **VERY STRONG**—a 1½″ strip easily supports 280 lbs
- **LIGHT**—considerably reduces weight of furniture
- **COMFORTABLE**—gives buoyancy to seating and bedding
- **HYGIENIC**—no springs to rust or collect dust
- **WEAR-REDUCING**—no metal to cut or wear cushions and covers
- **NOISELESS**—no creaking or twanging
- **NON-SAGGING**—will not break or sag, even after years of hard wear
- **COMPACT**—needs little space for inventory

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FOR DATA CIRCLE FDM NO. 1166

PUBLICITY FOR FURNITURE, shown here, is result of activities of the Home Furnishings Industry Committee. Left to right are Teel Williams, Mahogany Association; Virginia Pegram, Home Furnishings Industry Committee; and Howard Gatewood, Fine Hardwoods Association.

Management's Guide To Practical Publicity

This two-part series of articles tells you how, when and where to get more effective publicity for your product.

PART I: FOUR "FREE" PUBLICITY OPPORTUNITIES

By HELEN WILLIAMS

In today's highly competitive furniture market, every firm should make a concentrated effort to obtain as much good publicity as its promotional budget will afford. Certainly, each firm should utilize all of the "free" publicity services available.

The best way to secure better publicity is, of course, to hire professional assistance, either on the outside or as part of the company staff.

In the home furnishings field there are many avenues for publicity that cost manufacturers virtually nothing, including: marts and other showroom-type display buildings; trade or consumer shows, fairs and exhibitions; associations and industry suppliers.

Most buildings with furniture showrooms either maintain their own full-time publicity offices or hire outside publicity services to help promote the building and its tenants . . . on a year-round basis or for special markets and shows.

If you maintain a showroom in any building, check to see what publicity services are offered. Be sure to fill out any special information request forms sent you by the publicity offices.

Describe as completely as possible what you will have new, and try to suggest a few suitable story angles,

TO PAGE 28

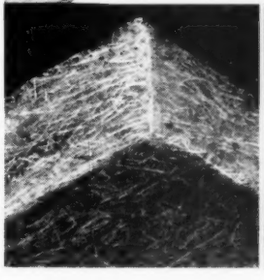
cut out all waste with

Burton-Dixie PACKAGED PADDING

. . . made exactly to your specifications

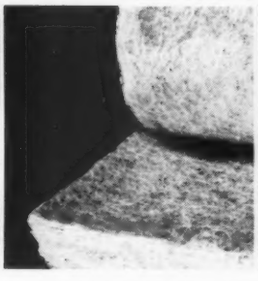
combines sewed padding securely stitched to a burlap skirt.

- **Eliminates two complete operations in your factory**
- **Cuts out all waste of insulator, padding and burlap because Burton-Dixie's sewed padding is made exactly to your specifications**
- **Speeds up your production and assures a uniform finished product**
- **Available in any size or shape**
- **Reduces your inventory to one item only instead of three**



SI-LATEX . . . a combination of interstitched sisal and pure latex, vulcanized together to make an extra strong spring insulator.

- **Laboratory proved to outwear ordinary spring insulators 2 to 1**
- **Eliminates all spring feel . . . cannot cup or hollow out**
- **Available cut to any size or shape . . . plain or stitched to cotton felt**

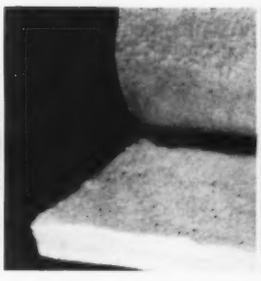


SISAL The finest quality you can buy . . . consisting of only the toughest, whitest sisal fibers available.

- **Cut to any size or shape**
- **Also available in rolls of any width**
- **Loose punch for a soft pad . . . or tight punch for a firmer pad**
- **Loom pad also available for a much firmer pad**

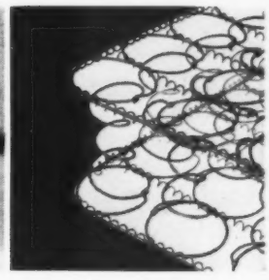
SEWED PADDING Spring insulator and fine quality cotton padding sewed together to save you labor and assure uniformity. For use on all spring constructions.

- **Si-Latex – Cotton. Burton-Dixie's exclusive Si-Latex insulator and cotton padding**
- **Sirex – Ordinary sisal insulator and cotton padding**



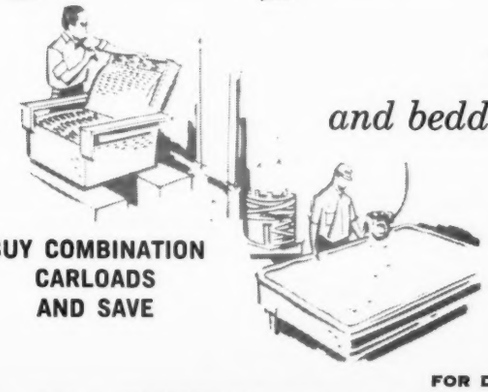
COTTON FELT The finest quality cotton only . . . consisting of high grade staple cotton and linters.

- **Made of 100% all new material**
- **Furnished to any thickness and widths**
- **Cut to any sizes or shapes**



MATTRESS INNERSPRINGS AND CUSHION SPRINGS The finest innerspring units made . . . available in standard and special sizes.

- **Accepted by nationally known bedding manufacturers for more than 60 years**
- **All standard coil counts available**
- **Any gauge wire you prefer**



BUY COMBINATION CARLOADS AND SAVE

one dependable source for your upholstering and bedding needs for over 60 years

Burton-Dixie Corp.

Chicago Plant and Executive Offices . . . 2024 South Racine

Manufacturing Plants in: Lansing • Dallas • Detroit • Denver
Kansas City • Blacksburg • Memphis • Atlanta

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so they can start thinking ahead. If you can give fairly complete information, but no photos, send the information and tell them when they can expect photos. If you won't have photos until during or after the market, tell the publicity office when the merchandise will arrive in your showroom so the building can take its own photos or direct the press to your space. If they *know* your photos will not be available early, the press rooms can often plan to use your merchandise in features during or after market.

If you can't send detailed news in advance, send *general* news of what you are bringing out, as most such press room services send out "trend" releases on news in styles, fabrics, colors, woods and constructions.

If you do not want your photos released until the market opens, the press rooms will respect your request, but will still appreciate getting the photographs early so they can have copy prints and captions prepared ahead. Most building publicity offices will copy-print and caption the photos to be mailed out or offered on display boards in their press rooms at their own expense, but sometimes only if photos are received in advance of the market.

You thus often save money by getting your photos to the press rooms early. If your photography is running late and your photos are also to serve as salesmen's prints, ask the photographer to make glossy publicity prints to be delivered at the same time he submits proofs to you, rather than waiting until style numbers, etc. are stripped in. Usually these advance, proof-stage prints are suitable for publicity. Attach complete identifying caption information and rush the photos to the press room.

If your product is a difficult one to illustrate, ask the publicity director's suggestions well in advance of the market or show. Photos should look as much like actual room settings in a home as possible. For maximum publicity use, even photos of single chairs or tables or television sets should be accessorized to look like they're in a home.

Most building publicity services will also let you put your own releases and photographs in the press room in quantities for the press to help themselves. It is usually wise to send your own detailed releases in quantity, and, if you're late, you should send captioned photographs in quantity. Ask the press room how many you should supply.

In addition to the releases and photos they send out themselves and post in their press rooms, most building publicity services also help guide consumer magazine and newspaper home furnishings editors, news photographers and reporters, TV newsreel and feature cameramen, and trade paper editors and reporters to the newsiest items in the building. They also answer requests for information about special products.

Special Exhibition Publicity Services:

When your firm schedules a product exhibit at a special trade or consumer show, fair, exposition, or exhibition, check into the publicity facilities available to exhibitors at the same time that you sign up for your booth or space. Such temporary exhibitions usually rely on publicity to draw trade or consumer traffic.

Exhibitions of this type include international trade fairs, home shows, and commercial product sections of many county and state fairs. Some of these types of shows cater to both trade buyers and the general public, and it is sometimes necessary to have both trade and consumer publicity releases available for the press.

How much publicity a trade or consumer show gives its exhibitors varies, but most shows at least prepare a few releases giving news highlights and general trends of products and services featured at the show. Many also publish a comprehensive fact sheet giving capsule summaries of each exhibit. Some prepare over-all trend stories giving the highlights about new items in each separate category of products featured.

If you do not have professional publicity help, let your advertising or sales manager prepare these materials. Begin it with the most newsy angle about your product (Is it the first of its type? Does it perform some special service? Is it an unusual value at the price, or unusually good-looking, or exceptionally efficient or cost-saving?). Be sure your story answers the "who, what, when, where, why and how" required by any news story.

A single news release will suffice, but if you have professional publicity help you might also wish to offer a kit with several stories written from different angles. These extra releases could include decorating-angle home service features, and perhaps background stories on the firm and its research and design programs.

Have glossy, 8″ x 10″ black and white photographs, captioned, available for the press if the show is not providing these in quantity from original prints you have sent. Good, sharp, inexpensive copy prints will do.

The type of photographs required will depend on the type of show. (See tips next month.)

Most important, be sure that you answer any queries from the show management's publicity service. Type your information. It is amazing the number of publicity information forms that are returned looking as if they're written in some new alphabet or language. Typing or printing is especially important for brand names, the company name and the names of any persons mentioned, and coined words describing features.

If you wish to supplement the show's publicity with your own efforts, ask how you can coordinate, what facilities will be available at the show for your own publicity people to work with the press, and when the show's press conferences will be held.

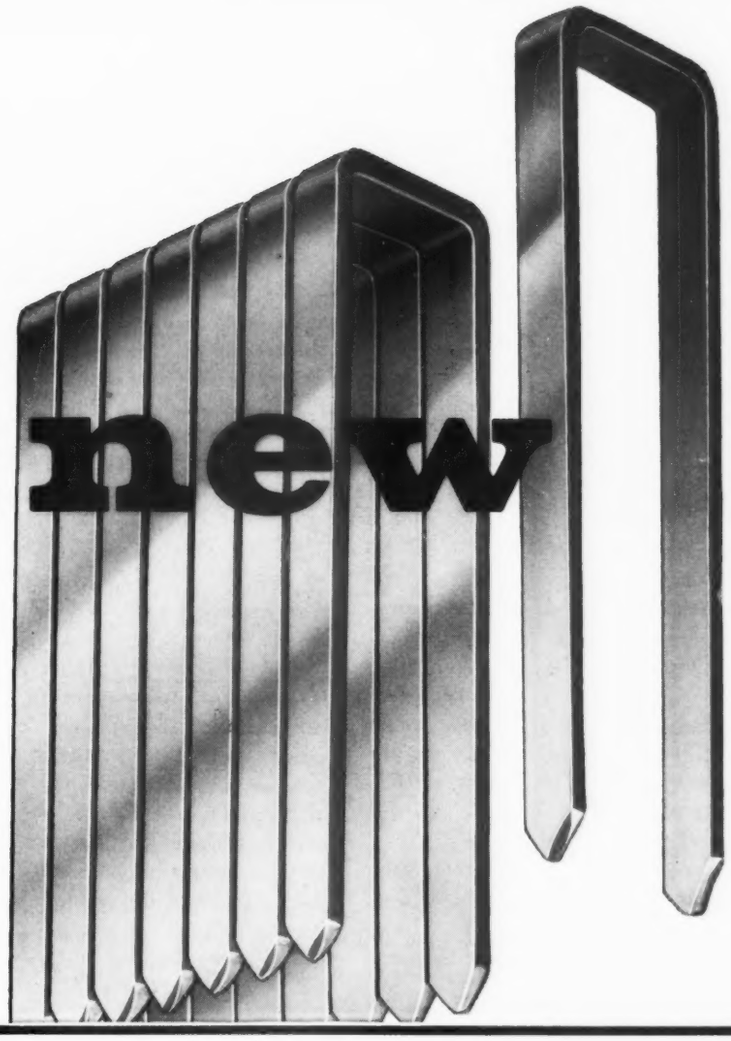
You'll find that the publicity staff is delighted with your interest. The more publicity on the show, the better for them. But most of all, cooperate with projects that they have already planned. Remember, they must have material *early* in order to do a good job.

Association Publicity Services:

Many manufacturers do surprisingly little to take advantage of the excellent publicity services often available to them through associations to which they belong, and very few make any special effort to tie in with publicity programs sponsored by their suppliers' associations.

Quite a few associations maintain continuing publicity programs to promote their members' products. For these programs they usually depend on photos and news from their members, or on information and photos from manufacturers using the products of their members. In addition to sending out actual news and feature releases, these associations frequently serve as information sources for editors and this can lead to important publicity for your firm. TO PAGE 30

THE new



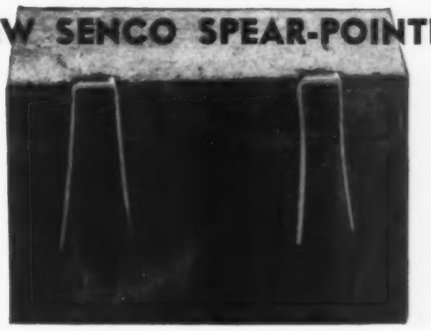
Both driving and holding power made easier!

Senco spear-pointed staples in hard woods

CONVENTIONAL CHISEL POINT

Note: Only average holding power.

NEW SENCO SPEAR-POINTED



Note: Legs spread to give maximum strength.

EXCLUSIVELY FOR USE IN SENCO TACKERS *ONLY.*

test on your application

®Senco PRODUCTS INC.

5563 WOOSTER PIKE
CINCINNATI 27, OHIO

SALES AND SERVICE IN ALL PRINCIPAL CITIES

FOR DATA CIRCLE FDM NO. 1170

GUIDE TO PUBLICITY
FROM PAGE 28

H.F.I.C.:

The most important continuing association-sponsored publicity program in the home furnishings field is that of the Home Furnishings Industry Committee, founded in 1942 to do an industry-wide publicity job to create consumer interest in and desire for new home furnishings.

Although various associations have contributed to the support of H.F.I.C. through the years, the largest part of its budget has always come from the combined contributions of the two manufacturer associations, the National Association of Furniture Manufacturers and the Southern Furniture Manufacturers' Association.

Thus manufacturers who are members of N.A.F.M. or S.F.M.A. are helping to pay for this comprehensive industry publicity program, although many fail to make the proper efforts to utilize it for their own companies' welfare.

To get their merchandise included in the various projects, member manufacturers should keep H.F.I.C. informed about their lines. The committee should be supplied with *advance* information on important new groupings whenever possible, to supplement the H.F.I.C. staff's own efforts to cover the markets to scout out the home furnishings news.

H.F.I.C., which is under the directorship of Virginia Pegram, helps promote the sale of home furnishings through continuing publicity services such as newspaper and house organ releases and ROP newspaper color reproduction materials, and through institutional-type services, such as full-color movie short-shorts and a 15-minute, thrice-weekly radio program, both of which offer decorating advice and are available for public service presentation or for sponsorship by local merchants.

Although many of the publicity features tell a general story of trends so as to benefit *all* member manufacturers and the industry, newsworthy new lines and home furnishings ideas are reported on along with decorating suggestions. Photos of actual products are used, of course, where photos are required. (H.F.I.C.-supplied furniture pictures were published more than 75,000 times by newspapers in 1959.)

To provide a continuing news feature service to the nation's newspapers, H.F.I.C. issues *Furniture Fashion News*, a standard newspaper-sized clip sheet which is sent to all newspapers of 4,000 circulation or over. Each issue shows many photographs of furniture in attractive, home-like settings. Free mats or glossies of the illustrations are available on an exclusive basis to the newspapers. This news service is being published ten times this year, with single-page issues some months, two-page issues for Spring and Christmas, and a special 7-page issue for fall. The most important issue is the fall one designed to tie in with the Furniture Fashion Festival and help newspapers plan special supplements.

Special themes and deadlines for the forthcoming issues will be supplied member manufacturers on request. Every N.A.F.M. or S.F.M.A. member firm should obtain this information, circle the deadlines, and make a special effort to supply appropriate photos and information for consideration for each issue, and for the other H.F.I.C. services.

H.F.I.C. is the best "free" publicity "buy" in the industry, and speaks with an authoritative and respected non-commercial industry voice. Editors look to H.F.I.C. for complete, impartial news of furniture products and home furnishings trends. (H.F.I.C. feature articles were used more than 10,000 times by newspapers in 1959.)

To assure high editorial acceptance of material, only good photographs can be selected for use in *Furniture Fashion News* and other publicity services. Today's home furnishings editors are demanding attractive room settings with a home-like appearance, and there are now enough manufacturers supplying this type of photo to make it very hard for manufacturers offering only bare "salesmen's" photos to get their pictures accepted by the editors.

To help manufacturers take photographs suitable for publicity use, H.F.I.C. has prepared a leaflet giving photo tips, and will also gladly advise individual member manufacturers. Some examples of good furniture photos of various types, specially selected by H.F.I.C., will be shown in the next issue.

If a member has a newsworthy furniture line but no good photographs available, H.F.I.C. will also plan and supervise good room-setting photographs that illustrate decorating news and suggestions, along with showing the furniture. The manufacturer will only be billed for the cost of the photo itself.

Other Associations:

Other associations that sponsor trade and consumer publicity programs that feature photos and information about manufacturers who use their products, include such groups as the Upholstery Leather Group, and the wood associations, especially the Fine Hardwoods Association, The American Walnut Manufacturers' Association and The Mahogany Association. Look around for other associations that also sponsor continuing or special publicity programs that manufacturers can "hitch a ride" on. These releases are usually sent out to home furnishings editors of leading metropolitan newspapers, or to even larger lists of newspapers in smaller cities, towns and suburban areas.

Since the association pays the costs of preparing and mailing the releases and duplicating the photos or making mats, manufacturers should cooperate fully by supplying information and good photos.

When sending the photos, include any available releases, booklets and other materials on each grouping. Be sure to include the name of the grouping and information on finishes, woods, fabrics, any special design, construction or function details, and the approximate retail prices for at least a few key pieces in the grouping. State also when each grouping was introduced and, if new, the approximate dates the furniture will start arriving in stores.

Supplier Publicity Services:

Possibly some of your suppliers maintain continuous or special short-term publicity programs in which they feature customers' finished products. Check into these opportunities. Usually only the largest suppliers, especially those that sell basic materials and ingredients, including finish, fabric, foam, aluminum and spring manufacturers, conduct such publicity programs.

Next month, Part II of this article will give some general tips on how to get more out of your publicity, whether you "do it yourself" or hire professional help, and suggest some other publicity channels that are easily serviced.—*Helen Williams*

Announcing the new Paslode "CLIPPER" clip applicator

PORTABLE
CLIPPER weighs only 5¾ pounds, is well-balanced, easy to handle

AIR POWER
—a squeeze of the trigger and air power does the hard work, fast

MAGAZINE FEED
—loading takes only a few seconds, no wasted clips, no wasted time. Magazine holds 50 to 75 clips, depending on size

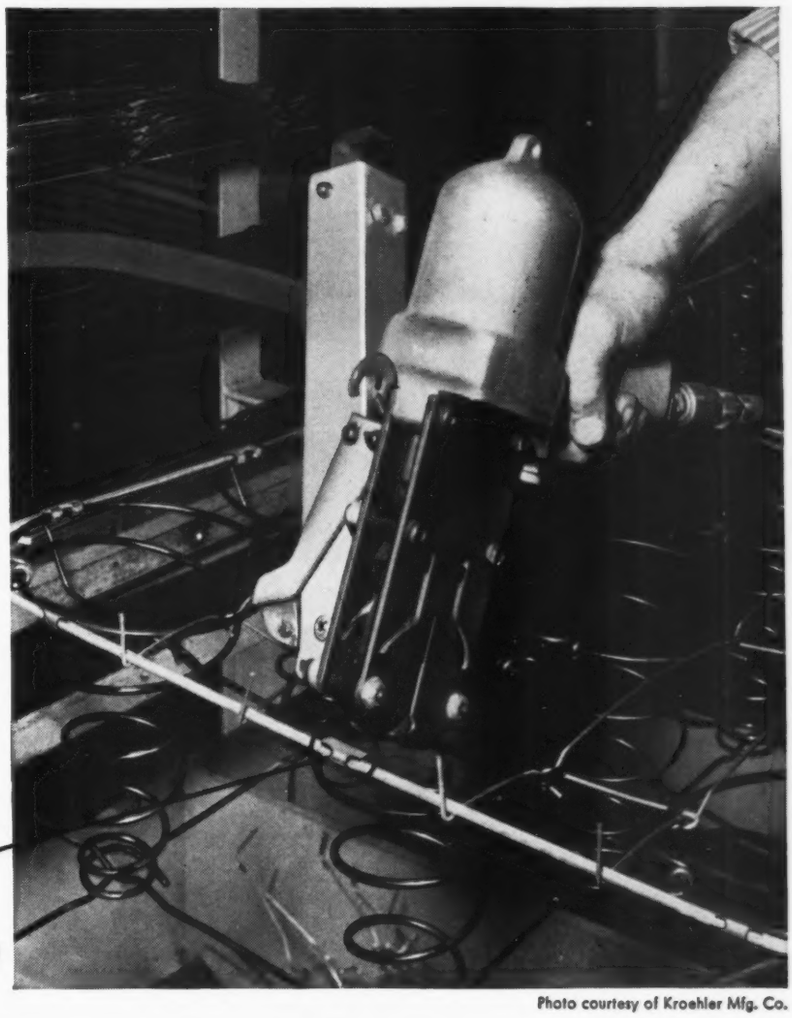
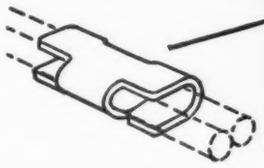


Photo courtesy of Kroehler Mfg. Co.

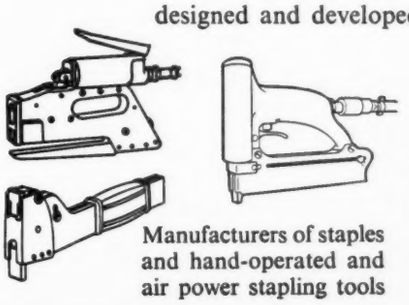
Special steel clips developed by Paslode come in two sizes; S-1 for wires 7-11 ga., B-1 for wires 11-13 ga. Other sizes are under development.



New power tool takes over a slow, hand-bruising job and does it better, faster, easier!

This is the first and only tool of its kind. The Paslode CLIPPER substitutes air power for muscle power, wraps a clip tightly around two or more wires in a fraction of a second, at the touch of a trigger...saves time and effort and reduces costs. Three-fold production increases have been reported.

The CLIPPER and the clips it uses were designed and developed by Paslode for the furniture and bedding industries. It has been tested, improved, and proved in production line use through the cooperation of a leading manufacturer. It gets the clip on tightly every time, has as much power at the end of the day as in the first minutes, makes it much easier for a worker to produce much more. Operation of the tool is simplicity itself. Reloading takes only a few seconds.



Manufacturers of staples and hand-operated and air power stapling tools

Write for data sheet. Write or wire for a demonstration on your premises.

PASLODE COMPANY
Division of Signode Steel Strapping Company
5860 Northwest Highway, Dept. FD, Chicago 31, Ill.

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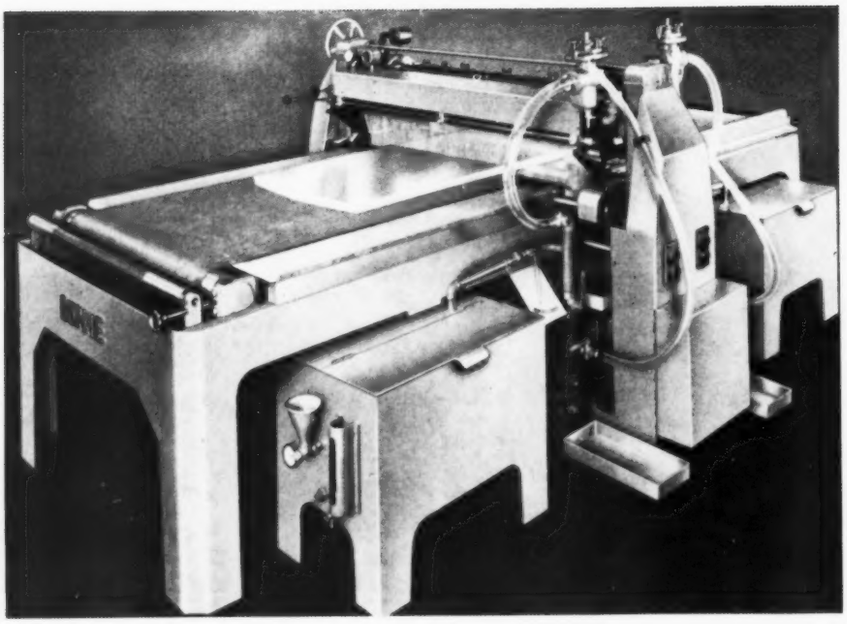
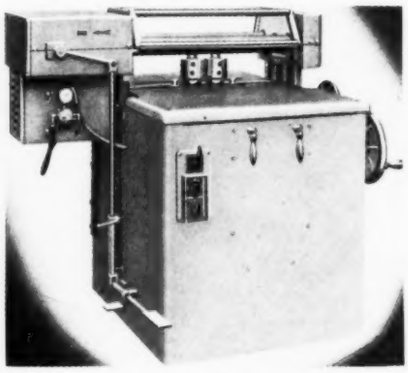
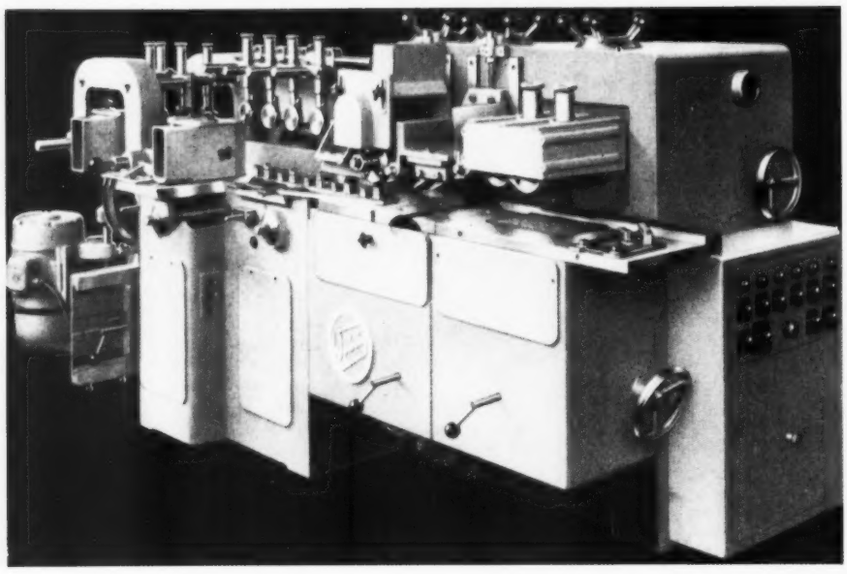
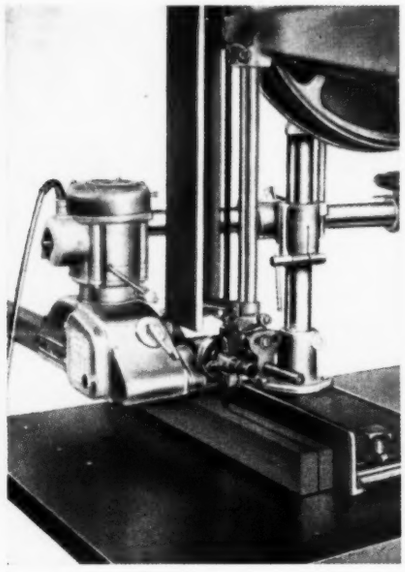




EUROPEAN MACHINERY to be shown at NAFM Fair, includes: Bürkle roller coater, left; Weinig moulder, bottom left; Helma-Nohoma copying shaper, immediately below; and Reich automatic feed attachment, bottom.





European Woodworking Machinery To Be Exhibited At NAFM Fair

Five major woodworking machinery manufacturers from West Germany, the Netherlands and Belgium have signed up to show advanced models of their equipment at the Sixth Annual Supply, Equipment & Fabric Fair, August 27-30 at Chicago. The event is held annually in conjunction with the convention of the National Association of Furniture Manufacturers.

According to John M. Snow, NAFM executive vice president, 91 exhibitors have contracted for display space, including three leading American woodworking machinery firms: Kohler-Joa, Onsrud Machine Works and Auto-Nailer Co.

West German equipment to be shown includes: Karl M. Reich Maschinenfabrik – automatic feeder attachments, distributed by Rudolph Bass, New York; Michael Weinig, K. G. – shapers, moulders and jointers, distributed by Joyce Research and Development Corp., Valley Stream, N. Y.; Robert Bürkle & Co. – roller coaters, veneer splicers and belt sanders, distributed by Joyce.

Machinery from the Netherlands by N. V. Maschinefabriek, Helma-Nohoma–tenoners, belt sanders, borers and mortisers, distributed by Joyce.

Machines from Belgium by Machines a Bois-Danckaert, Soc. An., not yet identified as to type, will be shipped direct to Chicago via the St. Lawrence Seaway.

Mr. Snow also said that Alliance de Constructeurs Francais de Machines-Outils, Paris, France, and Max Mayer Maschinenbau, GmbH, Burlafingen uber New Ulm, Germany are presently negotiating for exhibit space.

Complete illustrated directory of exhibitors will be published in the August issue of FURNITURE DESIGN & MANUFACTURING. ■

TEAMWORK ASSURES PROFITS
FROM PAGE 16

I handle the plant inspection program, and work with suppliers to establish the firm's materials standards. We can set our own standards to suppliers, and receive what amounts to a custom order, because of our volume."

According to Hunter, "Our application of quality control is a combination of practical application and statistical information. Although Gera does all cover testing in Chicago, we report our experiences with various covers in the pilot runs here. Both of us get customer reports of usage.

"We analyze reports monthly on cover and frame," Hunter continued, "and send the information to all plants. Two other statistical tools we employ are the sampling inspection, based on a daily report from each plant, and a final inspection report made daily based on inspection of each piece. The first gives us detailed data on the kind of defects being found, and the latter indicates how many per day in each plant. I recap these reports each month, and note each plant's level of efficiency."

Basic component buying is another trick up Hunter's sleeve: "We make our own cushions, without molding them," he said. "We use pin-core slab latex; cut it to shape ourselves and save the expense of molding, inventory on various sizes, molds, etc. We stock just one kind of 78-inch stock, and cut it as needed, gluing scraps to make any size, length, or shape. We do use some molded cushions, to meet all customer requests. Cushion stuffing is rapidly becoming obsolete; it's too hard on the new foam materials. They're better stuffed by hand. We would like to see a good machine to do the job. We use both sewn and zippered closing." Individual components are also employed in springing, instad of buying completed spring assemblies. "We have to stock 13 different parts, but it affects a considerable saving," Hunter said.

"We work with a standard frame concept," Hunter added. "We just vary the trim. We build the front section, then the back, allow each to dry for at least four hours, then assemble them. Cover, frame, and spring units proceed separately to the upholstery lines, where they are joined to complete the furniture."

"We try to keep our line people flexible," Hunter explained; "if they

TO PAGE 36

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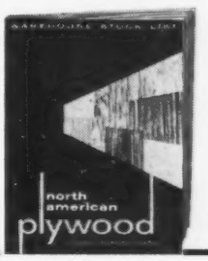

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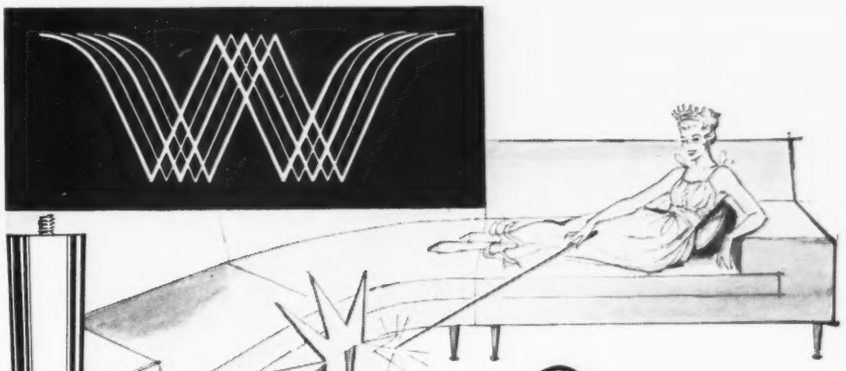

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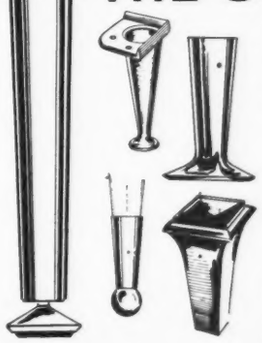

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What Are the 1960 Objectives of t

Exclusive FDM interviews with officials of the United Furniture Workers of America reveal direction of its activities for the coming months.

By DAVID LePAGE, Associate Editor
Photographs by the author

MICHAEL DI CICCO
Vice President, UFWA

FRED FULFORD
Secretary-Treasurer, UFWA

The 11th Constitutional Convention of the United Furniture Workers of America opened with a blast at "union busting" legislation, and closed with the resolve to be active in choosing new legislators next fall. Delegates also called for repeal of the Landrum-Griffin law.

In between, the battle cry was "Organize the Unorganized." This theme was echoed in speeches and reports, and clearly articulated in several resolutions. Chief among the latter were three dealing with chain and multi-plant operations, the South, and "sweetheart" contracts.

In an exclusive FDM interview, Morris Pizer, union president, elaborated his views on these issues, admitting that the union's declaration of war against back door agreements between employers and rival unions is only a small part of its aims.

"Our objectives vary from area to area," he said, "In general, we want to improve our pension and insurance funds, and establish a 35 hour week. As far as regions go, our biggest problem now is the South."

"Unfriendly local governments" and state right-to-work laws were cited by Pizer as the chief obstacles to union organizing below the Mason-Dixon. "When Taft-Hartley gave states the right to decide whether they wanted union shops or not, about 17 Southern states, plus Indiana, said no. That stopped us temporarily—but we've broken through

ALEXANDER E. BARKAN, deputy national director of the AFL-CIO Committee on Political Education, was a guest speaker at the UFWA convention. Listening at the left is Morris Pizer, president of the furniture workers.

f the United Furniture Workers?

here and there regardless, because the desire of the workers to be organized was strong enough," he said.

An upholsterer in New York for 15 years before he became a full time union official around 1938, Pizer has been reelected to the office of the presidency regularly since 1946. He still feels that the biggest threat to unionism and collective bargaining is, very simply, the resistance of employers. The plans he has mapped out for organizing the South include work at state legislature level (here his union will be helped by the central AFL-CIO), education of non-members in companies where there is a union, and organizations of open shops where there is not a union.

A convention report on chain and multi-plant activities noted that some five per cent of furniture and fixture plants—those with multi-plant facilities—employ 28% of all production workers in this field. Nine out of ten plants employ less than 100 workers, the report continued, "Our organization has had the experience of spending thousands of dollars, organizing plants, only to see many of them run away or go out of business in a few years, due to competitive conditions in the industry. Statistics confirm that very few of the chain or multi-plant companies go out of business. Furthermore, these larger companies are, to a great extent, pace-setters in our industry in that their operations largely determine prices, wages and conditions. These are the companies that can offer the severest competition to our organized shops," the report stated.

Where one or more plants of a company have been organized, it was emphasized, the UFWA's bargaining position would be strengthened by organizing the rest. Benefits won in one plant would sell unorganized workers, stop competing unions, and prevent loss of shops through bankruptcy, runaway or strikes. Delegates later voted top priority to chains.

The architect of the chain plant report was Fred Fulford, Secretary-Treasurer of the UFWA. In another exclusive FDM interview, Fulford indicated that he saw a current tendency in the industry to merge as the predominant factor of the future. "The big manufacturers will dominate the field; if we want to progress we'll have to organize that field," Fulford said.

"Some of the wealthiest companies, with some of the poorest paid workers, are in the South," Fulford declared. "The South is behind the North in industry, but it's awakening. With increased industrialization, there should be increased organization, and therefore a higher living standard. There are still millions working for substandard wages; they can't buy the furniture, autos, and homes they help produce. Look at the wage level statistics across the United States; where the wages are low, there it's unorganized."

"Many of our aims depend on a fair political climate," he said. "The main barrier to organization in the South is an anti-labor political climate." He named right-to-work laws as his nemesis, and "open intervention by state and city officials against the workers' right to organize."

"This kind of a climate is the greatest single threat to the growth of unionism," he said. "If they have the right to organize, and it's enforced, experience has shown that workers favor unions. It's short-sighted for an employer to resist the right of employees to bargain, to entertain a desire for a higher living standard; he benefits in the long run, through more products sold, higher national prosperity.

"Some unions have saved their industries," Fulford asserted. "They stabilized it, eliminated competition between employers, through price-cutting, and wage cutting —which wrecks worker purchasing power. The clothing field is an example.

"What the worker is really after is dignity," Fulford concluded, "not just security or a better standard of living. He doesn't want to be subjected to collections for the foreman's birthday, or lose his job when a friend of the foreman is out of work. In unions they get a chance to seek, and obtain, justice."

A better climate for labor was also called for by one of the guest speakers at the parley, Nicholas Zonarich, organization director of the AFL-CIO industrial union department. "Collective bargaining is turning up some new experiences," he told delegates. Besides the shutdowns, and mechanization, we've encountered an outright refusal to negotiate by some employers. Employers have never truly recognized the union meaning of collective bargaining."

"However," he said, "Collective bargaining isn't dead. It's more alive than at any time in the history of labor." In a third exclusive FDM interview, the Eastern vice president of UFWA revealed union interest in politics. Michael DiCicco will be leaving soon for a union-sponsored journey through almost a dozen countries in Europe, the Middle East and North Africa. He and three other members of the 28-man New York City Central Labor Council were chosen to go their separate ways abroad in behalf of American unionism. Their expenses will be paid by their respective locals.

"The labor movement here is ready to help others, by contributing both money and manpower to improve their economic positions," DiCicco said, "so they can have a higher standard of living."

"On the other hand," he added, "we can learn from them. We've learned the ropes mostly on an economic basis; they work more through political avenues. We can learn to protect ourselves politically, by studying their techniques. At the same time, we can showcase our accomplishments—a shorter work week, minimum wage, a higher standard of living," DiCicco said.

Convention resolutions approved, besides objectives already mentioned, included a seven-point program for full employment and a better living standard, support of increased and strengthened benefits for veterans, tax reductions to favor lower income groups, and action in the Central AFL-CIO to reduce jurisdictional disputes. ■

TEAMWORK ASSURES PROFITS
FROM PAGE 33

know more than one job they can keep their earnings up, since there is no waiting."

James Cadwallader, a line foreman on one of the upholstery lines, said four-wheeled trucks on a chain drive are utilized, with a variable speed, slow for upholstered, fast for beds. "We use Duo-Fast power brad guns and Senco Model H staplers."

"In shipping," Hunter said, "Plastic bags are used in the firm's trucks, along with a blanket wrap. Cartons are used for LCL (rail) and common carrier."

Another important section in the Standards department is Factory Engineering, headed by John Hill. He is responsible for supplying tools, jigs and fixtures used in manufacturing operations to all upholstering plants, and keeping abreast of all new equipment. "One of our major functions is standardization of equipment in all plants," Hill said. "We help Sloan establish and standardize rates. No plant can buy a tool or equipment until we approve it—then we designate it for use in *all* plants. We test all equipment before recommending it, except for mill equipment, which is bought locally by the Georgia and Texas plants."

Lawrence W. Smiley heads up Research and Development and is responsible for keeping up on all new materials. His department sets the standards for the materials, and works with suppliers who can deliver to the company's standard. In this he acts as a service element to Chicago purchasing. Smiley also experiments with combinations of materials. Most of the time he works from the basis of in-line styles.

The manager of all three plants in Rushville is Frank Clifford, assisted by Lou Fahey. A year and a half ago they added a liaison man, Leon Poe, a 26-year veteran with the firm, who now helps coordinate the activities of the three plants. "Our attempts to coordinate and standardize began about 1952," Clifford said. "Our Production lines went in about 1941—before that we were basically a custom operation. When Mr. Schnadig acquired International in 1951, he seemed to recognize the need for coordinating the scattered plants. Our line was becoming so varied it was almost impossible to establish incentive rates, so the growing engineering department set about formulating cost and rate data by Methods Time Measurement. Prior to that, we were beset by 'creeping rates' based partly on piece work and partly on time rates. The difficulty with time study was in deciding what constituted a normal rate. MTM breaks down into standard motions, the 'building blocks of cost,' according to Ward."

Clifford said there are 450,000 square feet under roof in Rushville, in addition to two outside warehouses. The Rushville plant itself operates 48 trailers, including two recently purchased 40-footers, and 41 tractors. It delivers by truck throughout the midwest. There are regular freight runs between Rushville and all the other plants except Corona, Calif. About 20 of the trailers have been equipped with cargo stabilizers as of now, including the new trailers, and the firm plans to convert all of them to this equipment by late September.

Fahey pointed out that there are some limitations to the big trailers—overpass restrictions because of their height, 12'6"—but they carry 171% of the load of the 34-foot van.

In addition to the Design Development and Manufacturing Engineering departments, an International upholstering operation, and shipping facilities, the Rushville plants include a Karpen division upholstering operation and some finishing facilities. Four other International upholstering plants stretch across the continent, according to Ben M. Dinitz, secretary of the parent corporation. They are located at Montoursville, Pa.; Bryan, Texas; Madison, Georgia, and the newest is situated in Corona, California. There are two frame plants, at Cornelia, Georgia, and Jacksonville, Texas. The firm maintains seven permanent showrooms in six cities—two in New York and one each in Los Angeles, San Francisco, Dallas, High Point and Chicago. Home offices are in Chicago.

Zarish is aided by Michael Litviak, his assistant, and Jack Vaniman, advertising manager. Separate sales managers operate under Zarish for the Karpen and International Divisions, Henry Woods and John Mortimer, respectively. International's concept of consumer satisfaction is just a little "different" from many existing marketing programs. According to Zarish, today's consumer is more educated, even on the lower income levels. She is conscious of color harmony and knows a little about fabrics. "Because of this, we do more today to help the dealer serve the consumer. We provide the dealer a complete package including various point-of-sale pieces. Five to ten years ago the manufacturer just let the dealer take over on delivery.

"We pioneered the inclusion of plastic slip covers several years ago," Zarish added. "Each piece and every separate cushion gets a cover."

The firm's most recent "pioneering" venture is a tie-in with a case goods manufacturer, Basic-Witz. "We agreed to produce an integrated 16-piece upholstered line that would pick up some of the frame detail used on a new 54-piece case goods line they were introducing," Zarish continued. "This correlated collection of dining, bedroom and living room furniture has proved an effective extension of both lines—the reception of "Basicanna" at the April show was one of the best we have had. It opened accounts we did not have before, especially prestige outlets. We guarantee it to stay in the line through 1961, which is in itself rather unique."

The success of "Basicanna" will have a definite effect on International thinking in the future, Zarish said. "It is a resounding approval of our total package concept, for one thing," he asserted. "This is the first time we have attempted a tie-in with case goods, the first time we offered such a large number of pieces, and the first time we have guaranteed a line to dealers for a year and a half.

"To us it is an indication that stores want to upgrade. Basicanna represents higher styling, a little higher price objective, and a new concept in cover quality. We are going to hold the price line and maintain our present construction or better. This package idea will help the dealer avoid a price race."—*David LePage*

CONTROLS FOR MANAGEMENT
FROM PAGE 20

what quantity of hours the workers failed to earn their task and relates that to the number of extra paid hours the workers received by exceeding their task.

It is obvious that if workers both *fail* to reach a normalized pace and *exceed* the pace—within the *same* week—either the workers are inconsistently applying their efforts or the

work standards were not established uniformly.

In a healthy productivity situation, where workers make proper effort on equitable work standards, then as subsidy hours decrease, the premium hours increase. Often the direction which new incentive plans take can be evaluated by use of this control.

Exhibit 3 is a tabulation of statistical data which relates to production but excludes factory labor, upon which the more advanced ratios shown in *Exhibit 4* are based. These ratios are called tertiary ratios and are used by the upper managerial levels to get broader control. The following are brief descriptions of some of these ratios and their use:

Ratio J: Productivity Economy

This control evaluates the productivity surges in terms of the damage it may do to machinery, materials and products. If the ratio value develops a steady decrease, it indicates that equipment, materials and products are being abused for the sake of more incentive premium monies.

Ratio P: Productive Load Ratio

This ratio provides a closer evaluation of the burdens imposed on the direct-labor effort. This ratio shows the return for each productive hour that the company must get to break-even. This ratio evaluates "profit elasticity", the ease of profit-making and the range of sales over which profits can be made.

Ratio LL: Overhead Activity Index

This is a vital control in industries with high fixed-investment costs. This is true of companies which are, in effect, in the business of selling their machine and plant time, and which have a variable product mix. This is true of printing plants, corrugated container and folding carton plants, machine shops and most high machinery-cost job shops. Besides showing the amount of total overhead which the company must spend to support it, this ratio shows the speed with which such outlay is being recovered. This then integrates the effectiveness of the sales efforts in supporting the economy of the production effort and indicates the upward or downward movement of the company's breakeven point.

Managerial Control of Production:

Evaluation provides a period appraisal of the events. *Control* occurs when the movements of ratios over longer periods are interwoven and interrelated so management can see the effect of individual events and area movements in the total economy of the company. This is best illustrated by simple charts. These charts are comprised of curves which move in response to every-minute happenings. From these management can broadly diagnose; the text explains meanings and impacts.

Chart 1:

At this company, long production runs were favored out of sequence with the production schedule. The workers gained more premiums as shown by the curve of item 13 as a result of the climbing Performance, but this was accomplished at the sacrifice of downtime increases (item 6) and a steadily decreasing Ratio XXXII. This practice sometimes leads to order cancellations and it may take management quite a while to find the pattern. Ratio XXXII certainly provides more than a clue.

Chart 2:

This chart shows the typical relationship between productivity, supporting expenses and overhead recovery. As we have said several times before, a point is reached in the climb of productivity where it becomes uneconomical. That is, above this point, the magnitude of the indirect labor used—materials handlers, setup men, maintenance services, additional inspectors, etc., plus the increase in waste and rejects, are great enough to offset the gains of the higher productivity. This point should be determined in each locale so that management can counsel properly.

However, as productivity rises, if said productivity is accomplished at operations carrying substantial levels of fixed expenses, then the climbing productivity is also accelerating fixed expense recovery (providing the sales department is able to sell the additional capacity thus liberated). Based on which operations are involved in the productivity increases, and how they change at higher levels, determines the slope rise of the recovery curve. This may or may not coincide with that of the productivity. As this chart shows, the optimum productivity for purposes of economical overhead recovery occurs before the optimum productivity as far as the supporting expenses are concerned. Again, this is not necessarily the same in all companies; it depicts a very specific local condition.

From this set of facts, it is obvious that the company is better off at the *lower* optimum productivity because in going up to the *upper* optimum they are incurring additional supporting expenses *and* the continued production pressure only succeeds in piling up work-in-process inventory and possibly distorting the internal asset balance of the company. This is why capital considerations must be integrated into decision-making. If continued productivity to the upper optimum increases the value of inventory by say 20%, then based on the proportion of inventory in the total asset picture, and the speed with which this is being converted into accounts

TO PAGE 38

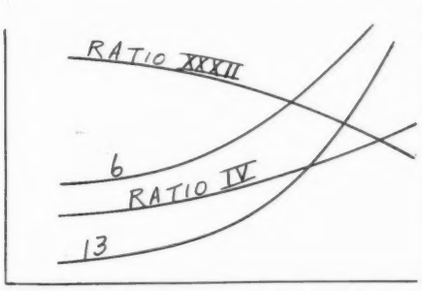

CHART 1. Effect of favoring long production runs.

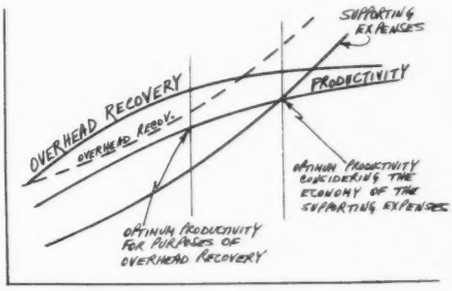

CHART 2. Determining optimum productivity, a) for expense recovery and b) for overhead recovery.

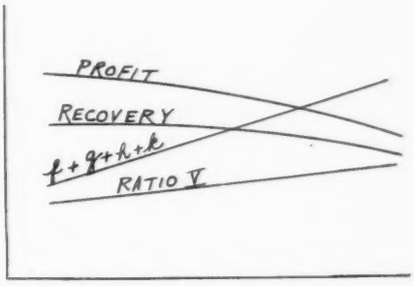

CHART 3. Increase in overhead expenses not justified by improvement increases.

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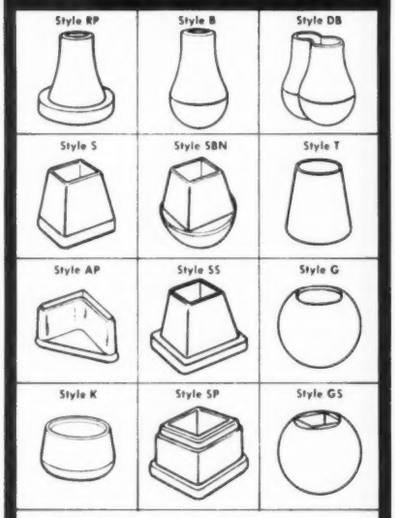

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receivable, it is possible not only to cause a serious drop in financial liquidity but actually to cause additional expenses in the form of interest charges for the use of capital to finance the higher inventory. This, as we shall see later on, also affects the working capital position of the company and changes of the degree of ownership.

All this occurs in many instances just through an unbalanced drive for productivity. The *small* question in many cases is whether it is worth the additional supporting expenses to get slightly higher productivity since the recovery does not increase. In many situations, *the major consideration* is the effect on the capital structure or the effect it has on the sales function. As a matter-of-fact, there are many instances where the productivity must be reduced below either of the optimum points because of more serious effect elsewhere.

And by the way, every time action like that becomes mandatory, it is clear indication that the company is organically unbalanced. That is, when the company was first started—or maybe afterwards—each function was permitted to develop and mature independently of the others. Thus the production is developed with a capacity that cannot possibly be supported by the financial function. Or maybe the capital structure is far too great for what is needed in production and the investors' money becomes sluggish. The sales also plays a role in this type of determination because sometimes the productive efforts are frustrated when sales cannot sell what production is able to turn out. And so we have a tri-headed biological structure which must be fully integrated, slowly adjusted and brought into proper balance.

Now let's get back to this chart and see what the decision-making should be if the recovery curve takes the slope of the dotted line. This is usually the case where the productivity occurs on operations which involve high fixed costs. Neglecting the financial aspect for the moment, this would call for an arithmetic comparison between the additional fixed expenses recovered versus the added supporting expenses. The economical point usually occurs well up on the productivity scale. As an actual matter-of-fact, the author has rarely seen the fixed-expense recovery as amounting to less than the supporting expenses. In this kind of situation (again with due consideration for the capital and sales areas) with the new recovery curve as shown, soaring productivity is a direct contribution to profits. The light vertical dotted line shows where such a higher optimum would occur. Of course, there are some other production considerations which have to be watched as well which might lower the new higher optimum level. This would be principally the rise in maintenance and repairs costs on equipment at the upper productivity limits.

Chart 3:

This chart depicts what happens when overhead expenses are added without first seeing whether they can be economically justified. In this case the decision to add and tolerate overhead expenses stemmed from a real improvement in Ratio V in the Improvement Index. The mistake was in not considering and comparing the limits of such an addition, compared to what the Ratio V was actually producing from its rise. A simple comparison to recovery would have done it. Here the increase in overhead expenses are not justified by a rise in the Improvement Index; the profits drop. Even worse, the expense recovery drops because the performance in the shop (and perhaps the inability of the sales department to sell the added capacity) cannot overcome the added expenses fast enough. Of course, there are rationales for this type of overhead increase, like better service to customers, expanded development needs, additional executive control. If all this is so, all these acts should result in more profits, a healthier capital structure or both. Other motives are immature and self-deceptive.—*Spencer A. Tucker.*

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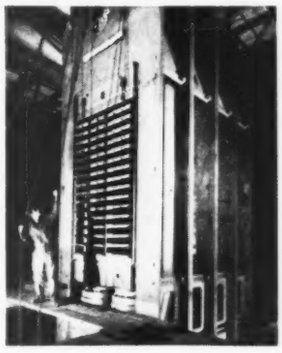
ROYLE & PILKINGTON CO., INC., Hazelwood, N. C., announced that *Charles Hyman,* 3865 Birchwood Ave., Skokie, Ill., will represent the firm's line of upholstery fabrics among midwestern furniture manufacturers and fabric jobbers.

FORMICA CORP. will begin production of plastic sheets in sizes up to 5 x 12 feet this spring, with the installation of a new press. The 16-opening model has a 7,000 pound capacity, 71% greater than the firm's other presses. The larger sheet sizes will be produced for shower walls, 12-foot counter tops, and other commercial applications.



CORRECTION: Two news stories originating with The Fine Hardwoods Association, in the April issue of FDM, inadvertently gave an erroneous impression when combined under a single head. The report on officers elected by the Hardwoods Exhibit, Inc., was followed by mention of Edward A. Heidt's election as president and chairman of the executive committee, but it was not specified that the latter election referred to The Fine Hardwoods Association.

Customer Expansions & Personnel Changes

COBB FURNITURE & APPLIANCE CO., Atlanta, Ga., opened its first branch operation in Sandy Springs. *Larry Oden* is the manager. The firm handles an extensive selection of furniture, in addition to major and small appliances.

WOODRUM'S OF CHARLESTON, W. Va., purchased the store of Spencer Furniture Co., on Main street, and opened it under the direction of *Jimmy Graham,* who managed it for Spencer for 11 years.

GANDLER FURNITURE CO., Phoenix, Ariz., has built a new store at 2960 Grand Ave. The $250,000 structure has 42,000 square feet of floor space, of which some 36,000 square feet will be for display and the rest for storage.

FOAM RUBBER CITY NATIONAL, franchising arm of the Foam Rubber City retail-manufacturer organization, completed 12 new franchise agreements in an expansion program expected to cover the nation by the end of 1960. New franchises were opened in Springfield, Mass., New Haven, Conn., Oak Park, Ill., and Warwick, Rhode Island; A branch franchise store was opened by the Youngstown Foam Rubber City in the Hubbard, Ohio, shopping center. A new Foam Rubber City specialty store has opened at Fort Wayne, Ind., and arrangements have been completed for outlets in Columbus, Ohio, Worcester, Mass., Syracuse, N. Y., Richmond, Va., Rochester, N. Y., and Easton, Pa.

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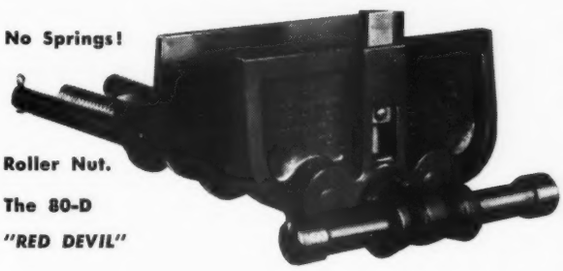
"RED DEVIL"



The most popular woodworking vise among Cabinet, furniture or pattern makers because of its dependability and smooth action.

■ **NOTHING TO GET OUT OF ORDER**

Roller nut vises are so constructed that it is practically impossible for the nut section to rise or the screw to spring out of engagement. Tried and Tested—Abernathy vises in 60 years have proved their worth in reliability, sturdiness and ideal action on any woodworking bench.

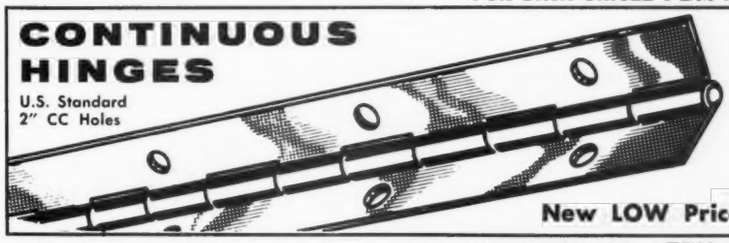
Write for 12 page booklet

ABERNATHY VISE & TOOL CO., 130 W. Home Ave., Villa Park, Ill.

FOR DATA CIRCLE FDM NO. 1135

CONTINUOUS HINGES

U.S. Standard
2" CC Holes



New LOW Prices

STEEL: Brass Plated Nickel Plated		SOLID BRASS POLISHED & LACQUERED	
1 1/16"	x .040 gauge	1 1/16"	x .040 gauge
1 1/4"	x .040 "	1 1/4"	x .040 "
1 1/2"	x .040 "	1 1/2"	x .040 "
2"	x .045 "		

NO LOWER PRICE — NO BETTER QUALITY

SELBY FURNITURE HARDWARE COMPANY
11 WEST 17th STREET, NEW YORK 11, N. Y.

FOR DATA CIRCLE FDM NO. 1169

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FOR DATA CIRCLE FDM NO. 1159

- **Materials**
- **Equipment**
- **Supplies**
- **Components**
- **Literature**

FDM IT'S NEW

For more information on items listed in the IT'S NEW Columns use the handy Reader Service Card opposite pages 18 and 50. Complete details on these items will be sent to you by the manufacturer.

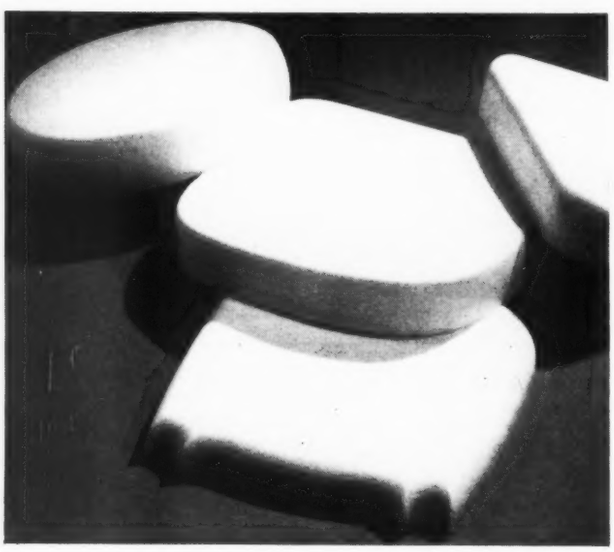
Furniture Cushions Molded Of Urethane Foam

Molded cushions for household and office furniture, bar stools and other uses are now being offered by Urethane Corporation of America, a subsidiary of American Excelsior Corporation. The material will be sold and serviced through the firm's subsidiaries in 26 cities.

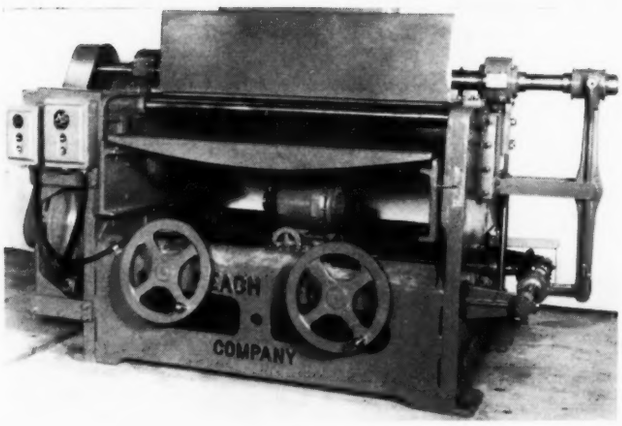
Cushions molded to exclusive customer specifications can be economically produced in minimum orders of 500 to 1,000 cushions. Urethane Corporation pays for all production molds and allows one engineering change. Prototype charge, usually not exceeding $75, is required.

According to the manufacturer "Urafoam" cushions are heat-resistant, can be exposed to 250° F for extended periods. It is available in Medium-Firm Type 5-A and Soft-Type 6. Type 5-A shows a flexibility loss of approximately 10 percent at minus 50° F.; a density of 2.5 lbs. per ft^3; R. M. A. 37–plus 4, minus 2 lbs., tensile strength 16.0 psi.

The company states that the material is odorless, mildew-proof and allergen-free. Standard molded cushions, some of which are illustrated here, are also available.



For More Information Circle Reader Service Number 444



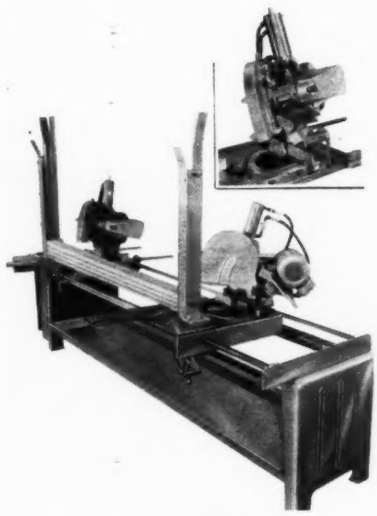
High Speed Sander Has An Aluminum Drum

A high-speed oscillating sander with an aluminum drum has been developed and priced especially to meet the needs of the smaller furniture plant and the sample shop. Adaptable to all types of drum sanding, it's manufactured in five widths, from 24″ to 48″. The lightweight drum permits high-speed oscillation for maximum smoothness of finish. The drum is 12″ in diameter, and takes standard 38″ sandpaper without waste. Oscillation is by straight line thrust. Feed speeds vary from 25 to 50 feet per minute. Positive feed is obtained with a chain drive and ball-bearing electric motor.

For More Information Circle Reader Service Number 445

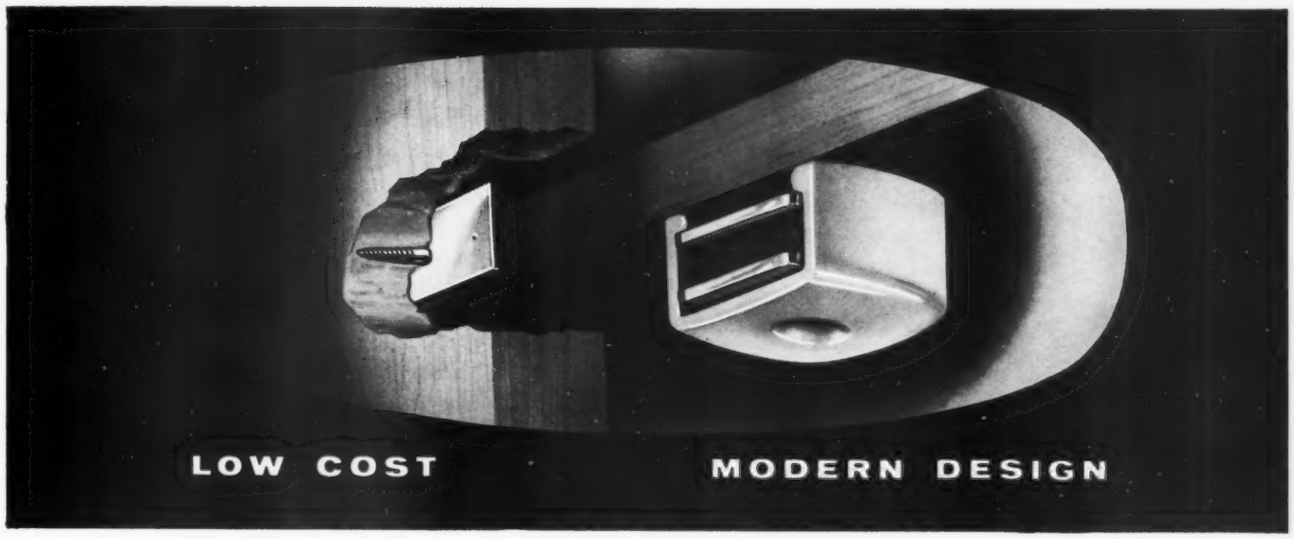
Double Cut-Off Machine Produces Fast Cuts

A high-speed Double Cut-Off Machine for production woodworking has been introduced by Pistorius Machine Co. Using a magnetic type feed that permits fully automated operation, the machine produces two cuts simultaneously. A unique swivel action in the cutting heads allows them to be adjusted for angular cuts in both horizontal and vertical-planes, producing compound angle cuts. For fixed angle cuts, machine is available with fixed heads. Centerless precision-ground tubular ways and permanently sealed ball bearings for arbor are featured, in addition to adjustable taper roller bearing pivot units. Heavy cast iron construction. A scrap pan runs full length of the machine, and chip exhaust outlets remove all wastes. Work automatically feeds to the table where it is clamped, cut, and ejected in automatic cycling.



For More Information Circle Reader Service Number 446

Perfect Performance . . .
by DESIGN
Stanley No. 42 Magnetic Catch

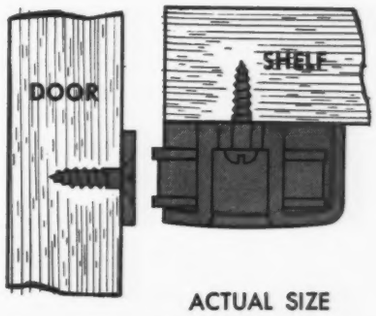


Here's a performance-perfect Magnetic Cabinet Catch dressed in a neutral-color polyethylene case that will blend beautifully with almost any wood. This combination of QUALITY . . . APPEARANCE . . . COST *cannot be matched!*

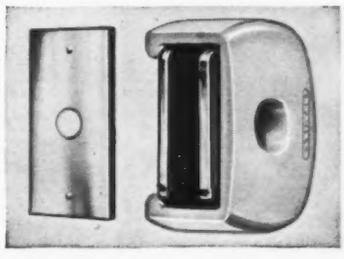
Put these features to work for you—

- **Scuff-proof, neutral-color polyethylene case harmonizes with almost any type wood.**
- **Single screw mounting speeds installation.**
- **Slot adjustment assures correct positioning.**
- **Single screw strike plate has projections for easy, exact alignment with magnet.**
- **Self-aligning pole piece insures correct contact with strike.**
- **No projecting corners or screws to snag clothing.**

Write for complete information
on this new magnetic catch to Industrial Hardware Sales, Stanley Hardware Division of The Stanley Works, 83 Lake Street, Dept. F, New Britain, Conn.



ACTUAL SIZE



PROJECTIONS ON STRIKE PLATE SIMPLIFY PERFECT ALIGNMENT WITH MAGNET.

ATTRACTIVE POLYETHYLENE CASE COMPLEMENTS CABINET APPEARANCE.

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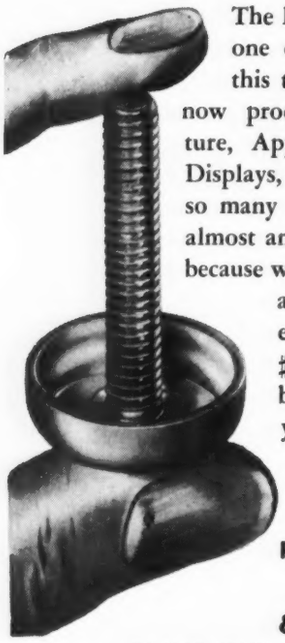
AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY
This famous trademark distinguishes over 20,000 quality products of The Stanley Works, New Britain, Conn.—hand tools • electric tools • builders hardware • industrial hardware • drapery hardware • automatic door controls • aluminum windows • stampings • springs • coatings • strip steel • steel strapping—made in 24 plants in the United States, Canada, England and Germany.
CANADIAN PLANTS: HAMILTON, ONTARIO AND ROXTON POND, P. Q

FOR DATA CIRCLE FDM NO. 1173

Which Leveler Solves Your Problem?



The leveler illustrated at the left is one of hundreds of variations of this type of product which we are now producing—Levelers for Furniture, Appliances, Vending Machines, Displays, Electronic Machines, and ever so many other purposes. We'll make almost any variation you have in mind because we are anxious to serve you, and at the same time, increase our ever growing line. Bulletin # 108 illustrates some of these, but won't you please send us your idea too.

Write for Bulletin # 108

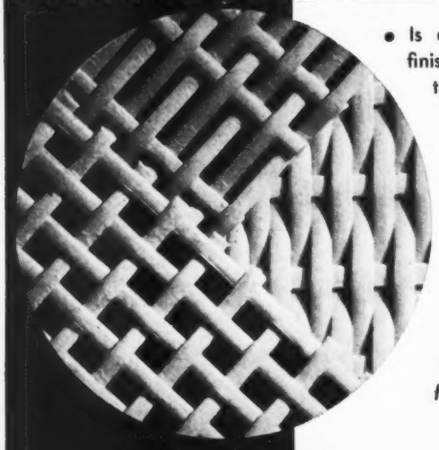
ROBERT E. Miller & COMPANY INC.

35 PEARL STREET • NEW YORK 4, N. Y.

FOR DATA CIRCLE FDM NO. 1161

FIBRO-KANE WEBBING

- Has the attractive variegated appearance of natural cane.
- Is much lower in cost, permitting its use in many applications where natural cane has proved too expensive in the past.
- Is easy to apply and finish—can be stained to harmonize with various woods.
- Does not become brittle with age. No undesirable loose "hairs" or splinters.



Samples and full particulars on request.

E. W. TWITCHELL, Inc.

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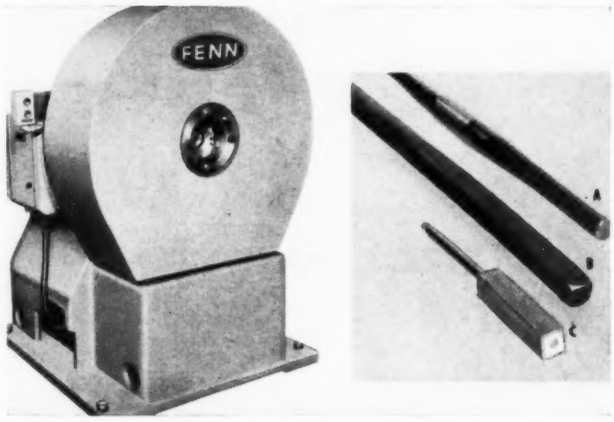
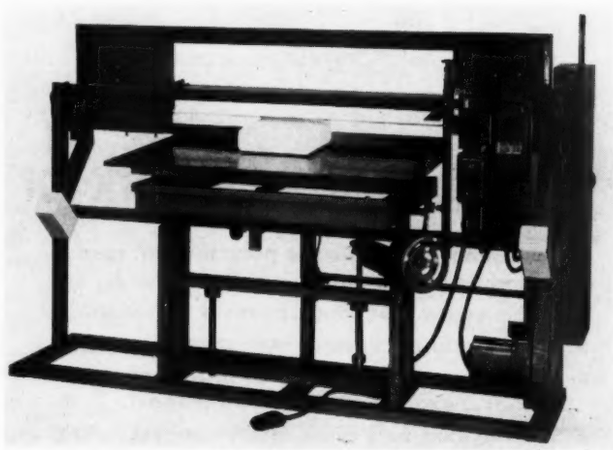
FOR DATA CIRCLE FDM NO. 1178



Die Swaging Machine Makes Tapers Up To 10 Inches Long

A die swaging machine, the Model 3½F, that will produce up to 10″ tapers on 1¾″ tubing in a single pass has been introduced by the Fenn Mfg. Co. Longer tapers can be achieved with progressive die changes. A solid one-piece meehanite frame and spindle assembly accomodates long length dies. Another model, 4½F, produces 15″ tapers on 2½″ tubing, at a rate of about six per minute. Both will handle welded and seamless tubing of ferrous and nonferrous materials.

For More Information Circle Reader Service Number 447



Cushion Shaper Features New Cutting Principle

An Edge Cushion Shaper, Model RF2, recently announced by the Frank Edge Saw Mfg. Co., is said to employ a brand new principle of cutting, enabling the operator to obtain the desired radius contour on cushion edges. Makers emphazise that the machine is not a buffer, and handles all standard cushion material, including latex, as well as standard foam. All cuts are said to be smooth, even and uniform, and simple controls enable the operator to change to the desired contour quickly and easily. Its speed of operation reportedly makes it possible for eight edges of a cushion to be completed as little as 60 seconds, depending on the type of material.

For More Information Circle Reader Service Number 448

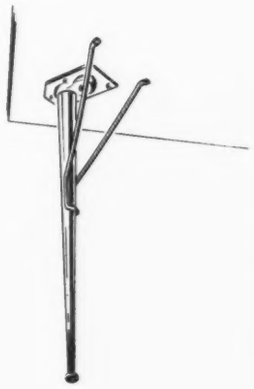
Gold Thread Overlay

A gold thread overlay is now available in tapered and square metal legs made by Enterprise Metal Products, Inc. Base colors are decorator red, pink, turquoise and black. The overlay is applied by hand and can be furnished in any of the Enterprise designs. The line features a rugged baked-epoxy finish.

For More Information Circle Reader Service Number 449

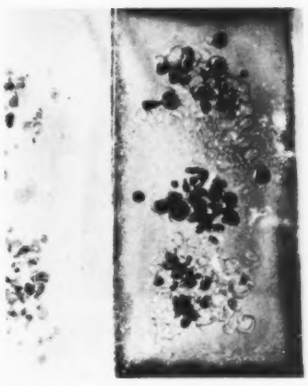
Long Leg Braces

Braces for furniture legs over 18 inches long are made by Wilkenson Mfg. Co. Said to give greater rigidity to long legs because of their own length, 12-inch, the braces are fastened with three screws. They are designed for tapered or square metal or wood legs; in satin brass, pewter, and coppertone finishes.



For More Information Circle Reader Service Number 450

Laminated Art Glass

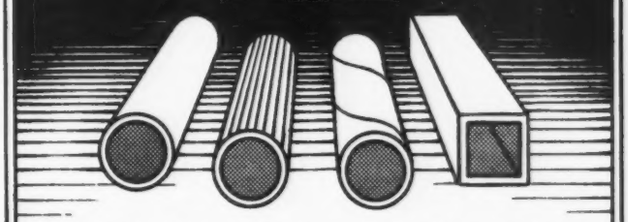


Fused glass designs in a variety of shades and patterns have been introduced by the Leonard Rodier Company. Up to six colors baked between two sheets of glass provide translucent effects with the illusion of great depth. Handcrafted in free form, representational stained glass and other patterns.

For More Information Circle Reader Service Number 451

a *new concept in* SOLID BRASS tubing...

...for YOUR industry



Our newly enlarged plant now stocks all standard sizes from 3/8" to 2" outside diameter in ROUND-REEDED-ROPE-SQUARE shapes. Check these other tremendous advantages:

- **No Investment (we stock it for you)**
- **No Labor (our skilled technicians finish all work with advanced new automatic machinery)**
- **No Waste (any length, any quantity, any finish EXACTLY)**
- **No Time Loss (all work delivered within 1 week)**
- **Samples on request!**

We can solve YOUR tubing problem!

AUTOMATIC TUBING CORP.

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FOR DATA CIRCLE FDM NO. 1138

CURVED PLYWOOD?

Made to specification

High-Frequency bonding on low cost forms

Tell us your problem — we'll solve it to your specifications. We manufacture unusual plywood shapes for applications ranging from church pews to water skis . . . table legs to torpedo cradles. Our high-frequency presses mass-produce curved parts fast and at lower cost than other methods, and with greater stability. We have over 200 stock dies available for stock shapes. Write, wire or phone RI 2-2474 for quotations and complete engineering service.

PLY-CURVES INC.

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FOR DATA CIRCLE FDM NO. 1167

NEW...WHISPER-QUIET...
"Cushionair" Screw Driver
(with important I-R EXTRAS!)

Completely new design, inside and out, makes this the most compact screw driver you've ever held in your hand. Perfectly balanced with increased power and new features for top productivity and easy maintenance.

I-R Size 000A2JC12 "Cushionair" Screw Driver

- **"Cushionair" Muffler**—reduces noise to a whisper without sacrificing working power.
- **Choice of 3 Clutches**—Positive Jaw Clutch for manual control of screw tightness; Cushion Clutch with predetermined torque; Straight Jaw Clutch for maximum torque.
- **Precise Dual-Speed Throttle**—low speed for starting and full power for fast, smooth driving to maximum torque.
- **Built-In Speed Regulator**—provides handy, accurate adjustment from minimum to maximum speeds.
- **Self-Lubricating**—to assure ample and positive motor lubrication.
- **Air Strainer**—protects air motor from line dirt. Can be easily disassembled and cleaned.
- **Powerful 5-Vane Motor**—unsurpassed for reliability, economy and long life.

Ingersoll-Rand
37A-8
11 Broadway, New York 4, N. Y

For details on this new model or Ingersoll-Rand's complete line of 184 sizes, call or write today.

FOR DATA CIRCLE FDM NO. 1156

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BERGER WELDED STEEL TUBING

DINETTE SETS • CHAIRS & TABLES • BEDS & DESKS • OUTDOOR FURN.

For increased production at reduced costs—specify Berger tubing. Size range: Round ¼" O.D. to 4" O.D. Square ½" O.D. to 3" O.D. A wide variety of shapes to meet your design needs. Special shapes to order. TAPERED ENDS OUR SPECIALITY! Beading, flaring, swaging and end forming in hot rolled, cold rolled or brite finishes.

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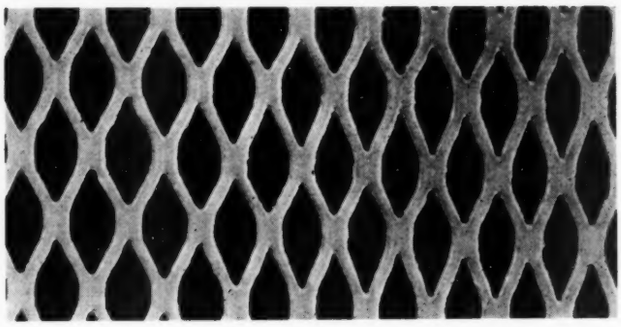
DEfender 5-8000

FOR DATA CIRCLE FDM NO. 1140

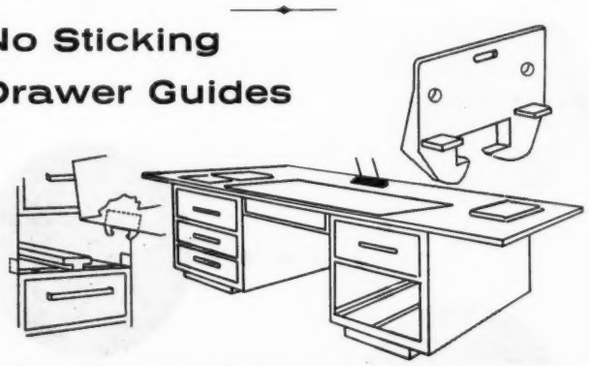


Plastic Nettings For Grids

The Plastics division of Reeves Brothers, Inc., announced the availability of expanded polyethylene and polypropylene, in the form of non-woven plastic netting. Uses include decorative grids, furniture seats, play pens, and shock absorbing protective shipping wraps. Available in black, white, and colors.

For More Information Circle Reader Service Number 452

No Sticking Drawer Guides



"Slides-Glides," made by the Plastiglide Manufacturing Corp., are offered as a solution to the problem of sticking drawers that result from warping, bulging, friction, sagging, and overloading. A guide block attached to the back of the drawer to assure smooth glide over the track and two right angle guides attached to the front corners of the frame, provide a perfect three-sided balance when the drawer is opened and closed.

For More Information Circle Reader Service Number 453

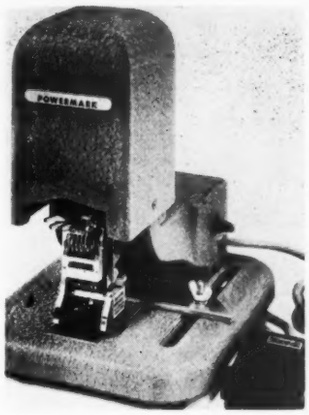
Clear Plexiglass Guard

A clear plastic circular saw guard which allows an operator to "see and saw" safely and simultaneously has been developed by the Brett-Guard Corporation.

Aircraft type shatter-resistant plexiglas shields the saw blade, allowing full vision and complete accuracy, while protecting the operator from flying chips.

For More Information Circle Reader Service Number 454

Machine for Numbering



An electric numbering and coding machine designed to number carbon inter-leaved forms has been added to the line of Pryor Marking Products. The "Powermark II" automatically adjusts to go through up to 16 carbon copies, and is available in 6 to 10 wheel capacities.

For More Information Circle Reader Service Number 455

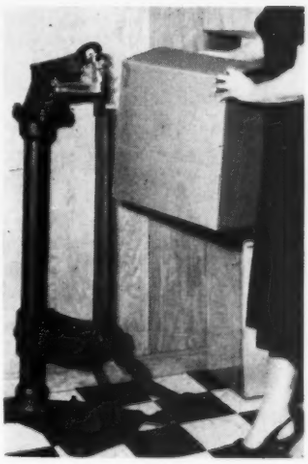
35 Inch Hardwood Legs

A new hardwood leg in 35 inch length, suitable for worktables, counters, stand-up desks, buffet tables, servers, etc., is being offered by Dennix Products Co.

They are available with brass ferrule and straight attachment bracket, or with plastic swivel glide with flare attachment bracket; are sanded, ready for finishing.

For More Information Circle Reader Service Number 456

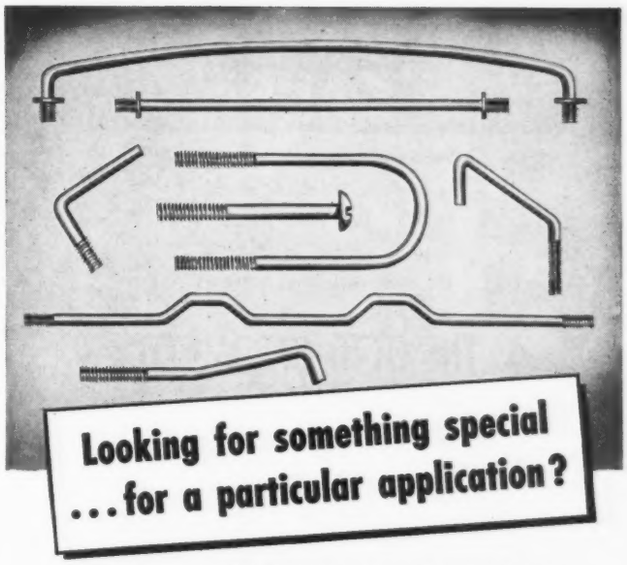
New Carton Stitcher



A new "Scotch" model carton stitcher designed for users who do not require production line equipment has been introduced by Heller Roberts Mfg. Corp. Full size stitching head accommodates deep cartons up to 31 inches.

Economical to operate, it does not require constant adjusting and attention of more complex equipment.

For More Information Circle Reader Service Number 457



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SERVICE–QUALITY–UNIFORMITY

OHIO ROD makes Special Headed and/or Threaded Fasteners in short and long length – in short or long runs. Headed, Threaded, Collared, Bent, or Offset.

Send drawings or blueprints for quotes and literature.

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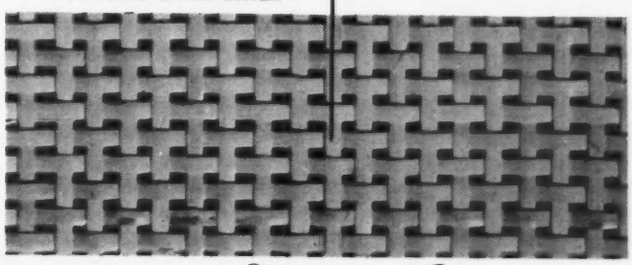
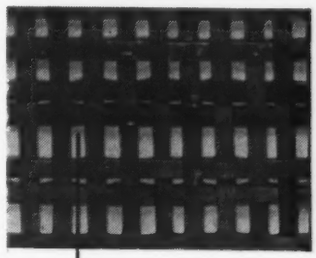
FOR DATA CIRCLE FDM NO. 1163

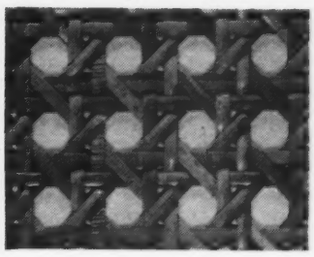
Genuine **CANE** DOMESTIC & IMPORTED

by A.R.& R.



for that "Touch of Elegance"





other designs available

AMERICAN RATTAN & REED MFG. CO.

Division of Janson Industries, Inc.

45 North Station Plaza, Great Neck, N.Y.

FOR DATA CIRCLE FDM NO. 1136

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Imported
Quality CANE Webbing

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Import-Export Established 1872
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FOR DATA CIRCLE FDM NO. 1150

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Advertise your products
WITH POSTCARDS
in FULL NATURAL COLOR

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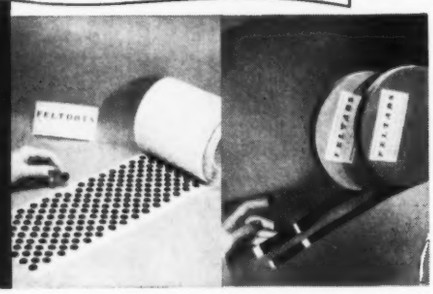
FOR DATA CIRCLE FDM NO. 1175

SELF-STICKING FELT

FELT
TAPE
TABS
DOTS



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NO GLUE...NO HEAT!

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SILENCES
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SEALS
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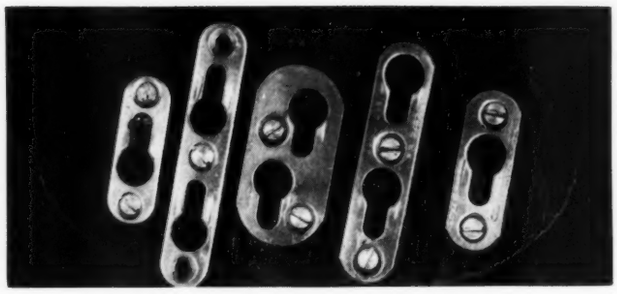
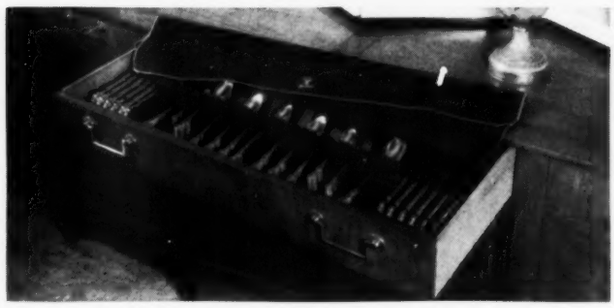


Keyhole Fittings for KD

Keyhole fittings introduced by Selby Hardware Co. are claimed to reduce assembly time and labor costs and provide greater rigidity for KD furniture construction. They make possible simple warehouse assembly as well as expeditious parts handling during finishing. Five designs are available.

For More Information Circle Reader Service Number 458



Silver Storage Pads

An augmented line of tarnish-proof Pacific Cloth silver flatwear storage pads is announced by The Gorham Co., makers of Gorham sterling. Pads are customized to individual furniture manufacturers' specifications, to fit any drawer, including those with curved fronts. They come complete with silver cloth and cover flap, and may be imprinted with decalcomania labels.

For More Information Circle Reader Service Number 459

Lightweight Impact Wrench

An exceptionally high power - to - weight ratio is claimed for a reversible impact wrench introduced by Buckeye Tools Corp. The 4¼-pound Model 34J boasts an output equal to air-powered wrenches in the 6-pound class, with little or no torque reaction on the operator. It has a 2,500 rpm free run-down speed and ¼" ID hose. It provides three impacts per revolution.

For More Information Circle Reader Service Number 460

"BB" Round-Knife Cutter

A "baby" size round-knife cutting machine, the Model BB, has been introduced by the Eastman Machine Co. Weighing less than 3 pounds and fitted with a 2½" knife, the "BB" is precision-balanced and has permanently sealed motor bearings. It will cut layers up to a ½" high, and is available with blades from 2½" to 7½". The machine is 7" high, with a plastic-coated handle.

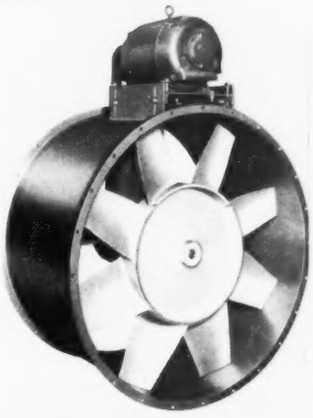
For More Information Circle Reader Service Number 461

Keyless Chuck Drill

Ten new heavy duty drills introduced by Porter-Cable Machine Co. include this one featuring a precision keyless chuck which can be tightened or released with a twist of the fingers. Models are available for all materials and with speeds ranging from 750 to 5,000 rpm. Pistol grips and "D" handles are other features.

For More Information Circle Reader Service Number 462

Flexible Belted Axial Flow Fans



A line of belted axial flow fans that are designed to permit subsequent alterations has been introduced by the Propellair Division of Robbins & Myers, Inc. A new bearing assembly is furnished with each fan, suitable for loads up to 50 HP. It has a universal motor mounting plate predrilled for all frame sizes the fan can accommodate.

For More Information Circle Reader Service Number 463

add the beauty of

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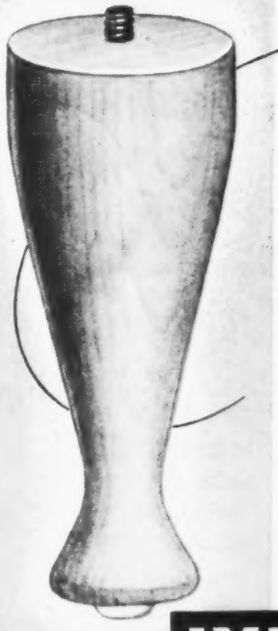

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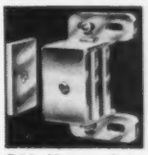
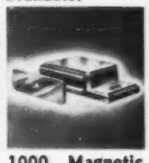
570 Magnetic Catch for furniture. Copper-tone finish — other finishes available.



591 Heavy duty magnetic cabinet catch. Overcome door warpage, misalignment.

600 Round magnetic catch press fits into ⅝" bore in shelf or frame.

602 Round magnetic catch press fits into ⅞" bore in door.



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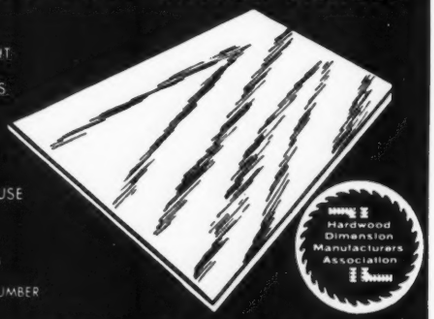

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P. O. BOX 4993 N. STA. • TEL. JA 6-6571 • MEMPHIS, TENN.

FOR DATA CIRCLE FDM NO. 1171

Smart, Low-cost Glide

A new Swivel-L-Glide, denoted Style 34, has been introduced by Arrowhead Associates. It features a plastic base with a protective edging for the built-in shroud. The low neck has a positive swivel action. Available in varied colors, the bases are 1⅛" in diameter. Shrouds and ferrules have a high lustre finish.

For More Information Circle Reader Service Number 464

NEW LITERATURE

DECORATIVE FELTS for interiors are listed in a booklet issued by the American Felt Co. Products described include "Wool Summa Suede," designed and manufactured for upholstery use. The booklet also lists distributors who handle the felt fabrics listed.

For More Information Circle Reader Service Number 465

TESTING INSTRUMENTS and equipment for testing a variety of materials are described in a newsletter-type brochure issued by Gardner Laboratory, Inc. The 24-page listing includes temperature and humidity cabinets, filter paper, plastic laboratory apparatus, constant temperature circulators, furnaces, electric timers and glassware.

For More Information Circle Reader Service Number 466

ENGRAVED AND STAMPED MATERIAL is described in a brochure published by J. S. Packard, Inc. Included are presentation plaques and engraved dials, scales and panels, building signs and engraved and stamped instruction plates, testimonials, as well as stencils for electronic chassis marking, for shipping and for identification.

For More Information Circle Reader Service Number 467

MOLDED V-BELTS recently introduced by Manhattan Rubber Division of Raybestos-Manhattan, Inc., are described in a bulletin just issued by the firm. Design features and performance advantages of the R/M CX Molded V-Belt are given, as well as specifications for standard and non-standard belt sizes, and a condensed pre-engineered CX V-Belt drive selection table for easy reference. The bulletin describes the belt as a fully molded, fully jacketed notched V-Belt, and the only belt of its kind ever made for light duty transmission drives.

For More Information Circle Reader Service Number 468

MAGNETIC CLIP GUIDE is feature of this new ARB-5 model stapler from Power-Line. Recommended for use on frames where it is not necessary to get into recessed places.

Air Tools Speed Up Furniture Construction

BY LEONARD S. SIMON
Upholstery Construction Editor

Air-power equipment is making obsolete the seemingly fast-operating, heavy-duty manual stapling equipment of just a few short years ago, with the power tools taking over in many of the operational areas of furniture and bedding fastening.

Power-Line Sales, Inc., Monterey Park, California, has developed an extensive line of air-operated portable tools for stapling, hog-ringing and nailing, specially designed to serve the furniture manufacturing, upholstering and bedding industries. New and improved models have been added to its broad range of specialized tools.

One of these tools, the new "ARN-2B Nailer," automatically accomplishes routine nailing operations on furniture and box spring frames. The Nailer accommodates nails from 1¼" to 2" in length, and, drives as many as 160 nails per minute with easy penetration, and without recoil, into both hard and semi-hard woods. Weighing just 5¼ lbs., the tool uses nails which are cohered together in strips, and an adjustable "ARB" latch mechanism insures that each nail is set to the desired depth. The Nailer operates on pressure as low as 80 to 125 lbs., and is said to provide a uniform nailing job, with production increases up to 150 per cent. It's also ideal, says Power-Line, for crating and general-production nailing.

Another newcomer to the Power-

TO PAGE 65

T/S *the finest*
UPHOLSTERY NAILS

Top quality nails in brass, steel, leatherlike, plain and fancy heads . . . in a wide range of sizes available for immediate delivery. Or to meet your individual specifications — ask about T&S custom service.

and FURNITURE GLIDES

The complete line of T&S furniture glides — including the newest swivel glides, rubber insulated glides and three prong, and drawer glides — offer the furniture manufacturer a wide choice in dependable quality.

FREE!
Illustrated 24 page catalog "Decorative Upholstery Nails and Furniture Glides"

THE TURNER & SEYMOUR MFG. CO.
TORRINGTON, CONNECTICUT
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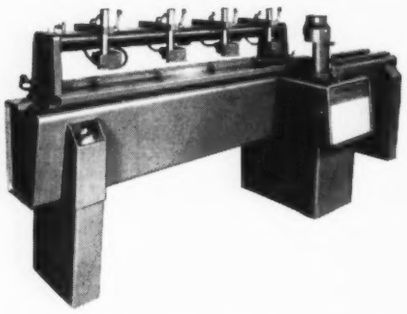
ONSRUD

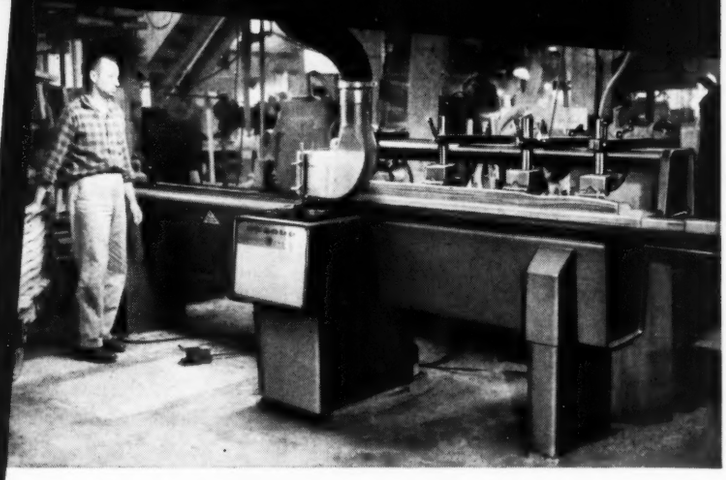
CONTOUR-PROFILERS



Looking for profits? Then this is the time to investigate the new Onsrud Contour-Profiler that outproduces a hand shaper up to 5 to 1. Eliminates marking and band sawing requirements . . . and greatly reduces the need for sanding shaped parts. All the advantages of the typical automatic shaper. Five minute set-up utilizing a form that is easier and faster to make than your present hand shaper forms. A machine for the sample room as well as the production floor.

A TYPICAL CUSTOMER REACTION

Mr. M. C. Turbyfill, Production Manager of the Hickory Manufacturing Company, Hickory, North Carolina recently wrote, stating "During these few days since the Contour-Profiler has been in operation, we have been especially pleased with the ease with which it is set up and the simplicity of the forms. It has eliminated numerous of our previous bandsaw operations and many jobs have been transferred from the hand shaper to the Profiler. So convinced are we of the Profiler's work and time saving features that we have given your representative an order for another one to be shipped as soon as possible."



If you now operate two or more hand shapers
THE ONSRUD CONTOUR-PROFILER IS TRULY
A MACHINE YOU CAN'T AFFORD TO BE WITHOUT!

Write for Onsrud Contour-Profiler BULLETIN 1175 for complete information.

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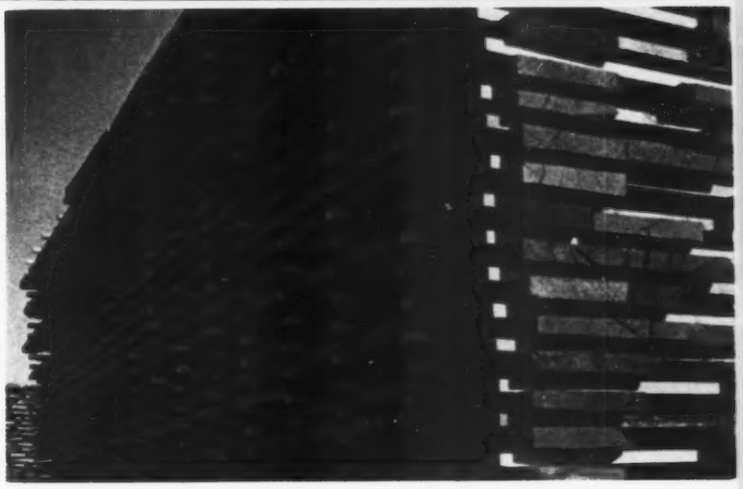
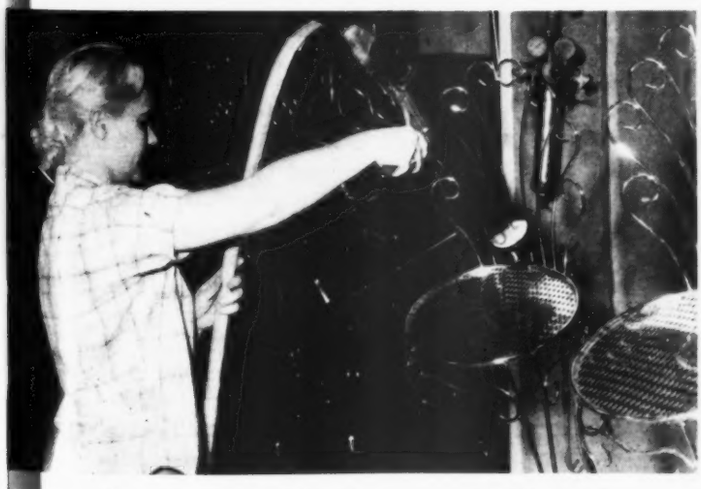
Furniture Engineering

A technical section for managers, department heads and technicians responsible for production, planning, cost analysis and research, in the furniture, upholstery, and bedding industries.

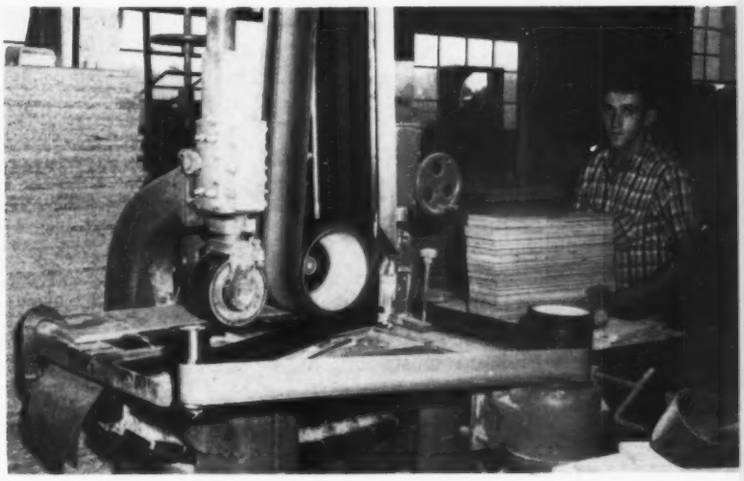
Facts You Should Know About Hardboard *Page 61*



Wood Tech: Trees for Furniture Part 2—by Carl Rishell *Page 54*



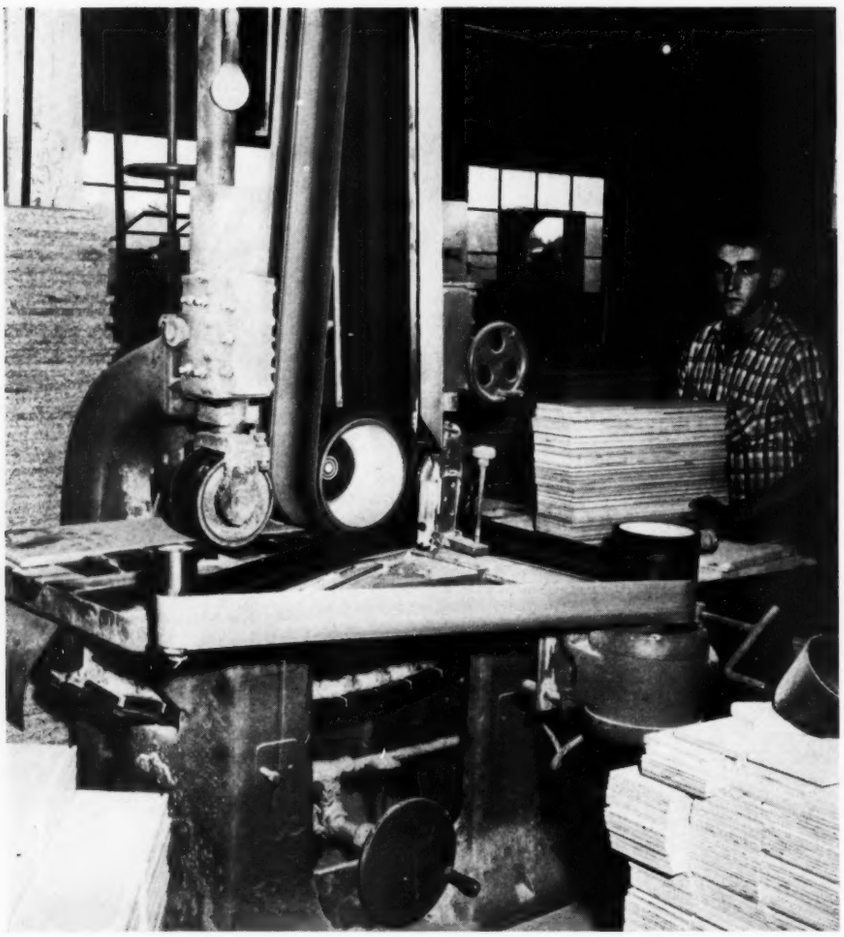
Electrostatic Sprayer Wraps Up Quality, Economy *Page 58*



Your Company Can Cut Sanding Costs *Page 52*

Furniture Engineering

JITTER-BUG SANDER gives best results with a sanding sheet backed with cloth rather than paper.



IMPROVISED SANDER utilizes an old chain feed rip saw to perform a dual role: the top belt sands the surface and the vertical belt sands the edges, all in one pass.

How Your Company Can CUT SANDING COSTS

In recent years abrasive methods and equipment have developed which will substantially reduce wood sanding costs. Jobs formerly considered the sole province of the skilled hand craftsman can now be done by machine, and new abrasives and accessories are speeding and improving all finishing operations. In addition, equipment is available with which the average plant can profitably make its own belts in slack periods.

Sanding carvings was a challenge even to hand craftsmen, before the spool sander came along. It used an abrasive commonly referred to as a delappe disk. These sanders now employ an endless cloth belt which runs over a formed idler wheel. The work is pressed against the wheel as with a disk, but the belt lasts longer and cuts faster. Usually, a garnet J weight cloth has proven the most satisfactory material.

A few years ago, an abrasive manufacturer came out with a new sanding device called a "PG" sanding and polishing wheel, primarily for polishing metal parts with odd contours. However, it has proven an exceptionally fine tool for many wood working applications.

Formed with over a thousand segments of cloth-backed coated abrasives, the "PG" is self-conforming and retains its shape throughout its working life.

In factories where it has been tried, the wheel lasted more than 35 hours. The wheel comes in 14″, 15″, 16″ and 17″ diameters and widths of 2″, 3″, 4″, 5″ and 6″. Abrasive grits from No. 150 to No. 320 are available. The grit is resin bonded to cloth.

Hand Tools Speed Sanding

One of the difficult aspects of sanding furniture in the cabinet room today is the odd contour shapes and the fitting of carvings to case rails, cleaning up glue used in the assembly, etc. If done by hand the work is tedious, boring and costly. For some, this problem can partially be conquered by using portable tools.

An air sander is light and maneuverable and can be fitted with almost any abrasive. Small sanding spools are available in any diameter for small radii.

The "jitter bug" sander comes under the classification of small tools.

If fitted with cloth backed abrasive it stands considerable abuse and does the work of a lot of elbow grease.

There are several makes and models available. Some move in a reciprocating action while others move in an orbit.

One manufacturer of portable sanders has attached a suction that removes 91% of the dust. This provides cleaner work and faster sanding, not to mention the comfort to the operator.

Suction is derived from a high speed centrifugal fan mounted on the armature shaft. The motor has its own fan cooling system entirely separate from the vacuum system. A metal skirt around the base creates a continuous in-rush of air all around the pad to exhaust the dust at high speed into a bag at the rear. The skirt is hinged to facilitate changing of the paper which is held tight at both ends by simple cam locks. The pad has a ¼" orbital motion and rotates at 4,000 rpm under load. This rotary action simulates hand sanding to make the tool equally effective with or against the grain, and to eliminate scratch marks or gouging.

The felt back-up pad is 3⅝"x7⅛" to accommodate a third of a standard sandpaper sheet. A special long bag is used when feather-edging dry wall joints and leveling plaster which produces a smoke-like dust that is irritating to plasterers and carpenters.

An air cooled motor and gearless design assure continuous trouble free operation. Weighing 6 pounds 10 ounces, this compact sander can be used conveniently in any position for long periods of time without overheating. No lubrication is necessary. The frame is die cast polished aluminum with a pistol grip and trigger switch. It measures only 4¾" wide, 9½" long, and 6½" high.

Drum Sanding Odd Shapes

For the manufacturer of odd shaped stock, sanding has always required more money per unit than flat panel work. Consequently, any machine that promised cost reduction by eliminating the hand work has met with great favor.

Single drum sanders failed to meet the rigid requirements of finish sanding. Besides, they were hand fed and the human element was always present. A few years ago, a sander was developed that utilized feed rolls constructed of many rubber segments separated by thin spacers for pulling the work across an endless sandbelt.

Curved serpentine drawer fronts could be sanded. Tapered stock such as solid or plywood chair backs, tapered legs and rocker runners were sanded successfully. Skis and curved chair seats were sanded at a high level of production that meant a saving. Even veneered surfaces are safely sanded without sanding through the thin plies.

Developers of the machine attribute this accurate sanding to the positive power feed which provides uniform movement of work across the sanding belt. Rate of feed is adjustable from 40 to 75 linear feet per minute. A belt speed of 2,000 to 5,000 feet per minute provides cool cutting and insures longer abrasive belt life.

Belts can be changed in two to three minutes. This permits changing from a coarse sandpaper to a polishing paper without undue down time. Another method used to rough and polish sand without setting up is to run two abrasive belts. For instance, on a 24" machine two 12" belts are run over the same pulley.

TO PAGE 56

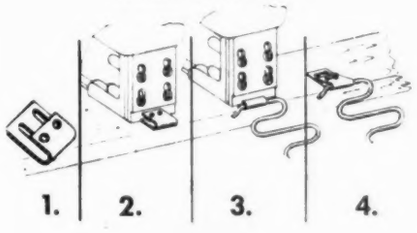
NOW SPOTNAIL SPRING CLIPS

4 Times Faster!

This new method is a real labor-saver for the furniture manufacturer. Two staples are positioned and driven in seconds, instead of 4 nails being laboriously hand driven. No need to hammer down the clip, as with jig-driven cut nails or less efficient air guns. This new Spotnail method saves up to 75% of the man hours required to hand nail spring clips.

Spotnailing does a better job too. No splitting of frame when DC Spotstaples are used. Up to 30% better holding power, as a result. Clips are positioned automatically and the staples driven perfectly. No "shiners" to tear fingers and fabrics.

HERE'S HOW



1. Place the spring clip in position.
2. Place Model LHL Spotnailer with cut-out plate over the spring clip. Spot the first staple through the two holes and into the frame, automatically.
3. Hook the spring into the clip and slide the Spotnailer into place. The same gun now positions the staple over the second set of holes in the clip.
4. A touch of the button or trigger drives the second Spotstaple with over 5000 pounds impact force, neatly bradding over the spring clip as the staple is driven. Only Spotnailers offer this power, using 40% of air required by guns of equal piston displacement.

Phone or write for a demonstration in your plant.

SPOTNAILS, INC. 1527 LYONS ST., EVANSTON 33, ILL. UNiversity 4-3011

FOR DATA CIRCLE FDM NO. 1172

FDM

WOOD TECH

CARL A. RISHELL

Trees For Furniture—Part II

The subject of particle board, discussed in the preceding article, is an absorbing one and easy to write about, because it is a material that will have a tremendous impact on the furniture industry. The reason is that particle board not only has fine properties for furniture core stock and other furniture parts but, to secure the best use of the new product, it will be necessary to partially redesign the furniture in which it is used.

This is certain to be a good thing, for we will learn much from the experimentation that takes place, and discover many new technical design methods that go into other fields.

After all, particle board is 85 per cent wood. Furthermore, it is wood in its natural form. Unlike paper and hardboard, the wood fibers have not been pulled apart, then artificially put back together again. In reality, it is plywood or laminated wood made up of very small pieces of veneer. Therefore, we can learn much about solid wood, plywood or particle board by continuing our interrupted studies of the various wood species used in furniture manufacturing.

Many stories and books record the excellence of furniture woods. All of us who work with this wonderful material have had our own experiences, but few write about them.

For example, a few years ago the writer was a guest of English friends who took him to lunch at an old inn in the ancient village of Colchester. Although unexpected, this turned out to be a red-letter day for a lover of wood. The first room visited at the inn was the pub where warm ale, beer and stout are served.

Though typically British, this room still was unusual. The walls and ceiling were constructed of huge oak timbers with plaster panels between them. The panels were framed into rough squares by the timbers which, however, were of unusual shape. Most of them were fairly straight except for a severe crook at one end.

Noting my interest and perplexity, the manager of the inn offered to show me throughout the structure and relate some of its history. According to him, the village of Colchester dates back to the pre-Roman-occupation days, and the inn is thought to have been built about 1100 A.D. It has been in continuous use as such since its construction.

Many years before the inn was built, Colchester was on the seaside. It was an important ship building center, and equally noted as a place where worn out ships were demolished. You have guessed it—the timbers in the old inn were the frames from broken up ships, hence the crooks in one end of each. No doubt these timbers were carefully selected from a considerable supply of discarded ship timbers, but any material that will provide service for 900 years is something to marvel about.

In one part of the inn, the construction of the plaster paneling was visible and most interesting. Between the heavy ship timbers were small poles, about three inches in diameter, set up about as we place studding in modern construction except that they were only about 8 inches apart. The spaces were then criss-crossed with leather thongs, making a pattern similar to an open woven wire fence. The entire panel then was filled in with mud or plaster to a thickness of several inches. This, I believe, is known as wattle construction.

Much of the wood furniture in the pub, dining and other rooms was original and mostly of English oak—what a testimonial to the beauty and durability of wood! This experience is not unusual, for England abounds in very old wood construction that antedates the records of local inhabitants.

Yellow Poplar

Years ago, when I began my work with the wood products industries, my experiences started in the virgin woods of the Appalachian region—first in southern North Carolina, then Virginia and Kentucky. Probably in no place on earth was there a greater concentration of fine virgin yellow poplar. There were trees of seven and even eight foot diameters and more than 200 feet high; five and six foot girths were common.

The majestic yellow poplar, largest trees east of the Rocky Mountains, were the rivals of the incomparable white pines of the east, and much larger.

It was an unforgetable experience to stand behind a planer and watch panel boards of 48 or even 50-inch widths emerge. Maximum width depended on the size of the planers, not the timber. This smooth, yellowish wood, with a surface one longed to touch, was the plywood of that day. The wide boards were called "panel poplar", truly the cream of the crop. Not a knot or blemish in its 16-foot length and only an infinitesimal strip of white sap wood on the edges of a few boards.

For what was this incomparable wood used, and why the demand for such great widths? Plywood was not common in those days and wide boards were needed for many uses, such as paneling, cutting tables for tailor shops and in a host of other places where plywood serves today.

Large yellow poplar squares, free of every defect, were needed for moulding and blocking felt hats—even the smallest check would show up in the felt of the finished hat.

Sizable quantities of poplar were used by the wood turning industry. At each mill, we kept a pile of wide poplar boards reserved for the neighboring inhabitants' use in building caskets for their dead; two 16-foot boards would be all that was needed for each. These boards were never sold—they were given to anyone needing them for that service.

Wide panel boards brought the highest prices but, even in those days, the narrower boards brought in the bread and butter, just as today. Some of the material was made into house siding, mouldings, sheathing and other construction items, vehicle stock or just plain boards for general use. Heavier material was desired for house

gutters and downspouts. Yellow poplar generally excelled most species requiring a durable paint finish.

In spite of the multitudinous uses for yellow poplar, which in the aggregate consumed millions of feet of stock, they were small compared with the amounts used for furniture core stock. This species has been, perhaps, the most desirable of all for this exacting use. Probably more American furniture has been made from it than all other species combined. Why?

There is no single property that makes a species most desirable for furniture cores. In fact, it is an exact combination of many properties and it is difficult to single any one out as the most important.

Yellow poplar, incidentally, is not poplar at all. It has the euphonious scientific name of Liriodendron tulipifera and is closely related to magnolia. Sometimes it is called tulip poplar because it has a flower similar to a tulip. In some regions, it is called white wood—a poor description for even though the sap wood is almost pure white, as in many species, the economically important heartwood is a light greenish brown or yellow.

Poplar has a rather distinctive mild odor that reminds one of cucumbers. The heartwood is quite durable but, more important for furniture uses, it is very stable. Furthermore, it contains no resin pockets to cause show-through in the face veneers, and it is an excellent wood for gluing.

Its grain remains flat and if it checks at all, which it seldom does, the checks are very fine and of no consequence. Yellow poplar is fine for painting or staining and, if a moulded edge is needed for the core stock, there is a minimum of difficulty in matching it.

Yellow poplar machines exceptionally well and can be planed to a beautiful sheen. It does not split easily and is fine for holding screws and other fasteners.

Its other strength properties are indicated by its specific gravity, officially listed as .42, which means that it is less than half the weight of water. This figure probably is an average for the yellow poplar of some years ago when much of the lumber was cut from lightweight virgin trees. Lumber now being cut more likely comes from second growth timber, which is somewhat heavier and harder, so the specific gravity may be .50 or more in some cases.

To the furniture manufacturer this means that the yellow poplar which he is using in his furniture is about midway in bending strength, screw-holding capacity, crushing strength, etc., as compared with such species as hard maple on one end of the scale, and basswood on the other. In other words, it has sufficient strength for all furniture parts that are not subjected to the most severe stresses. For example, it is outstanding for furniture cores, but not very good for chair legs.

The most serious threat to the dominance of yellow poplar for furniture core stock is particle board. This material will largely replace yellow poplar lumber for this purpose, sooner or later. However, flakes which can be made from the species will produce the highest quality of particle boards.

Basswood

The wood that made venetian blinds and canoes popular is basswood, technically termed Tilia americana. Sometimes it is called linden, white wood, wahoo, lime tree and bee tree. It isn't used a great deal for furniture, even though it makes a fairly good core stock.

TO PAGE 56

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FOR DATA CIRCLE FDM NO. 1158

BELT LIFE UP 100%—"RN" garnet abrasive belt (2/0J), developed by 3M, is double-flexed at the factory to increase flexibility and heat resistance.

New Abrasive Increases Belt Life 100 Percent

Cochran Furniture Co., Lincolnton, N. C., manufacturer of Lincoln House maple furniture had a bottleneck in its saddle seat sanding department. Consumption of abrasive paper was high and production slow.

Briefly, the saddle seat process is as follows:

1. Chair bottom blanks are cut from glued-up stock.
2. Bottoms are roughed out with a double spindle shaper.
3. Outside contours are formed by an automatic shaper.
4. Legs are then attached to the bottom and the half-complete chair moves to the saddle sanding position.

FINISHED CHAIR from Lincoln House collection. Photos and data courtesy Minnesota Mining and Manufacturing Co.

Here a new type resin bond garnet belt is employed on a stroke sander, operating at 5,900 surface feet per minute.

Belt is a 2/0 (100) grade closed coat garnet mineral coating resin bonded to "J" weight cloth backing, supplied by Minnesota Mining and Manufacturing Co. Material is double flexed by the supplier.

Three hand blocks are used, each providing a slightly different contour. The finish provided by this operation is the one that receives the sealer and subsequent top coats.

Glue bond abrasive belt formerly used for this operation lasted for an average of 98 chairs. The garnet belt, which costs approximately 12% more than its glue bond counterpart, is averaging 200 seats (actual range 185 to 220)—a 100% increase in belt life.

The supplier also states that greatly increased belt life is also being experienced on a chair-post sanding operation at Lenoir, N. C.

Other experience with the material indicates it is well suited for the punishment normally received by coated abrasives in open drum, edge sanding, molding sanding, multiple drum, spindle sanding and pneumatic drum sanding operations. ■

WOOD TECH

FROM PAGE 55

Basswood is the most popular of all species for high grade venetian blinds, a product for which its properties make it outstanding. First, it is a very light wood, but comparatively strong. It takes a paint finish better than most woods and, being devoid of gums and resins, permits use of the most delicate colors without fear of their being stained by exudation of natural oils and resins.

Furthermore, when basswood is properly dried, it will remain quite stable. It will not warp and twist, which is a most excellent property for a product composed of thin slats.

The specific gravity—the all important indicator of most of the strength properties—is only .37 and, as may be expected, it is a fairly weak wood and does not hold fastenings very well. This weakness probably is the principal reason for its not being used to a greater extent for furniture core stock. Basswood will have much greater use in furniture cores, not as lumber, but as chips and flakes in particle board.—*Carl A. Rishell.*

CUT SANDING COSTS

FROM PAGE 53

The work is first fed through one side of the machine for rough sanding and fed through the other side, without additional set up, for finish sanding.

Make Your Own Belts

In every woodworking factory there are slack times for the millwrights, oilers, saw and tool room helpers, or even clean-up men who are, if properly instructed, quite capable of producing more than enough belts for the average department.

Only simple tools are needed to set up a complete belt making operation: (1) skiver, (2) clamps, (3) knife, and (4) bench.

A skiver is a fast turning grinding wheel and adjustable table to hold the material. As the coated material passes under the wheel, the glue and grain are removed to the desired width of lap, to produce a smooth surface to which the other end of the belt is glued.

A simple clamp for holding the glued joints together until the adhesive sets can be made in any factory shop.

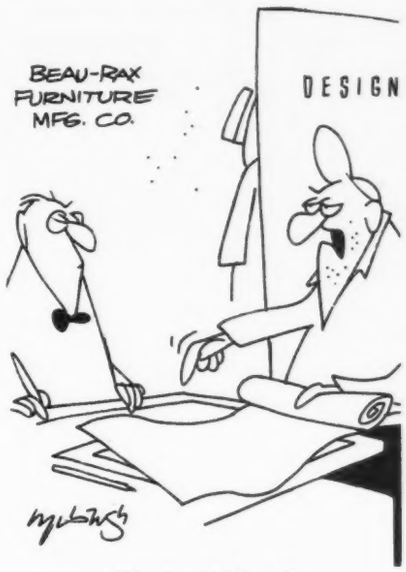
The knife for shearing the paper is fastened rigidly to the table near the supply of paper at a 45° angle to

the table edge. It is simple in design and easily constructed. The table should be two feet wide and longer than any belt to be made.

By following the four easy steps below little difficulty will be encountered in producing satisfactory sanding belts with either cloth or paper backing. (1) Roll the belts across the knife, cutting the first 45° line. The belt is pulled across the table top until the heel of the 45° angle lies on the pre-determined belt length mark. This mark should be the length of belt around sander pulleys, plus a one inch lap allowance. When the desired length has been measured, the belt will be laying across the knife as the starting point for measuring the belt length. It is simple to shear the belt at 45° to the desired length. (2) The belt is then skived on both ends and the abrasive removed to the width of the lap. (3) Glue is applied to one surface and (4) the joints placed under pressure until set. Care must be taken at this point to line the belt edges when applying pressure or a crooked belt that tears easily will result.

This type of joint leaves an area the width of the lap bare of abrasive, but results in a surprisingly smooth running belt without the customary bumping encountered by belts with a thick joint.

Some concerns skive one end of the belt on top and the other on the bottom. A joint made in this manner is smooth running with no skip in the abrasive when the belts are joined. It is weakened by the amount of backing removed in reducing the joint thickness of that of the belt. For this reason the first method is recommended over the second, since the small area bare of abrasive is negligible in relationship to the total belt area.



"You're kidding."

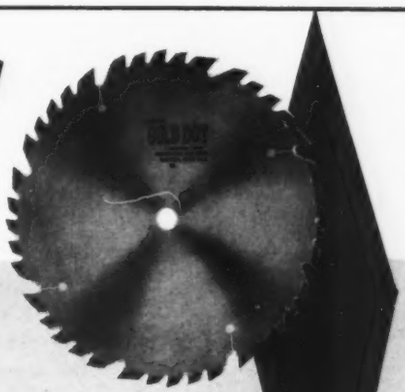
One fault with homemade belts is that often they do not run true. Either the edges are slack or the center of the belt runs with a hump and tight edges. To prevent this, align the belt edges to insure a straight edge before gluing the skived joints together.

Another fault is a high joint, which causes the belt to bump every time it passes under the pad. If this occurs remove more material from the joint when skiving and apply more pressure to squeeze out any excess glue that might be left in the joint.

Last, but not least, do not make belts too far ahead of their use, unless you have a storage box to maintain the correct humidity. Belts are like cigars, they need a humidifier to keep them in the best condition for maximum service. ■

There is nothing missing in the quality of Gold-Dot Carbide Saw Blades

HEINEMANN'S CARBIDE TIP SAWS HAVE ALL THE FEATURES A QUALITY SAW MUST HAVE . . . .



THE "GOLD-DOT"

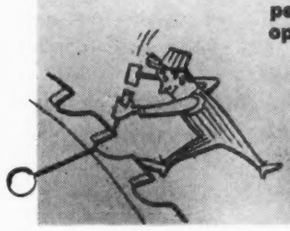
VIBRATION DAMPENERS

Copper discs inserted under extremely high pressure eliminate scream and whistle so prevalent in many carbide tip saws. The "Gold Dot" also serves to eliminate vibration, permitting higher quality standards on all applications, with an increased blade life that can only be appreciated by using these saws under the most rigorous work conditions.

EXPANSION SLOTS

Expansion slots are recommended for most job applications. They permit cooler running and allow for heat expansion under severe operating conditions, thereby reducing cracking and warping.

MADE IN SIZES FROM 5" TO 36" DIAMETERS.



"LOCKED-IN" TIPS

Newly designed tips of special analysis tungsten carbide are precision seated by the highest skilled craftsmen. The unique "locked-in" tips hold tighter as more pressure is applied to the cutting edge, affording greater safety and additional blade life.

KERF AND TOOTH SPACING TO MEET ANY JOB APPLICATION.

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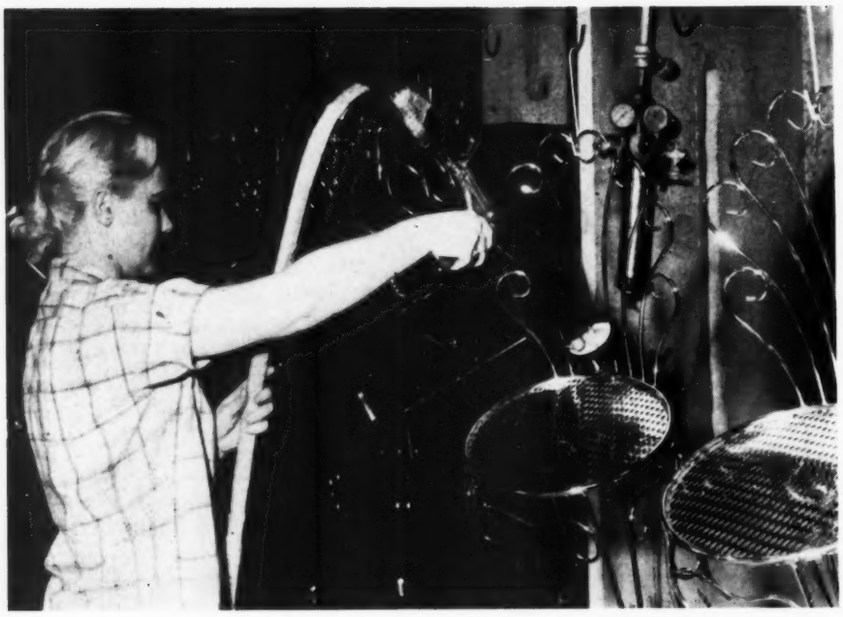


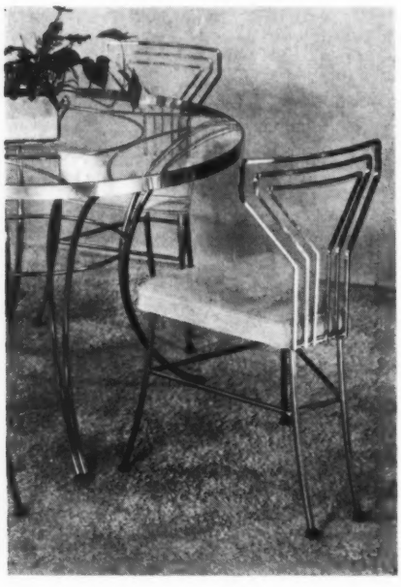
WRAP-AROUND effect of No. 2 Process electrostatic spraying smothered high finishing costs at George Koch Sons, Inc., Evansville, Ind. Here an employee applies a clear protective coating to brass plated items with a Ransburg Hand Gun.

Furniture Engineering

Electrostatic Sprayer Wraps Up Quality, Economy at Koch Plant

Surprising results followed the decision of an Indiana furniture firm to improve product quality by a change in finishing methods.

George Koch Sons, Inc., Evansville, makes a "Metalcraft" line utilizing brass-plated wire. The style finally caught on in 1953 after two premature promotions, and has been increasing steadily ever since.



METALCRAFT table and chair group features the brass-plated construction characteristic of George Koch Sons, Inc.

Once the Koch line was assured a success, the firm began to look around for a better finish.

"We were using a water dip lacquer for the protective coating," said D. F. Nuebling, superintendent. "It was all right, but we decided to go to a bake finish to further improve the quality of the work. None of our platers had baking facilities, but we did, so we converted a former cleaning line to finishing. And we went to electrostatic spraying, with the Ransburg Hand Gun."

The process and the present epoxy finish did accomplish the primary objective, improved quality. "It has about six times more abrasion resistance than the former dip lacquer," Nuebling said, "—but that's not all. Maintenance in the painting area is greatly reduced, and, although comparative figures are not available on all items, we're saving substantially on materials."

Today, 90 to 95% of Koch Metalcraft is brass-plated, Nuebling explained, but many pieces are also enamelled. "We made a test run on an enamelled TV table. It has two perforated trays and folding legs. We used to use 30 gallons of enamel to paint 1,000 tables by combination dip and air spray touch up. Now, with electrostatic, we're getting 1,000 tables with only 10 gallons of paint. In addition to saving two-thirds the paint, we get a more uniform and higher quality finish with the No. 2 Process Hand Gun."

Much of the company's operation is short run production of items ranging from brass-plated vanity tables and benches, costumers, drum hassocks, chairs, and mirror frames to enamelled tea wagons and TV tables.

"We strive for maximum coverage," the superintendent said, "and the No. 2 Process electrostatic application gives us this desirable finish without sags and runs. Areas which get exceptional wear—such as table edges and chair seats—get extra film thickness for added protection. A time-saving feature is the 'wrap-around' of electrostatic painting which gives us a uniform coating over all areas while painting from one side only."

A finishing conveyor line 385 feet long used in the Koch plant travels 9 feet per minute, with work hung on holders at 12" centers. One operator does the painting. After coating, the work goes into a gas-fired, overhead oven where it bakes for 19 minutes.

The firm has no brass plating facilities; the work is fabricated there, sent out for plating, and then returned to Koch for the application of a clear protective coating.

"Repeated tests on our new finish show it be impervious to stains from any material normally found in the home," Nuebling added. That goes for ammonia, alcohol—even iodine." ■

A *Victor* CLINCHED NUT PLATE FOR 2¢?
UNBELIEVABLE . . . BUT HERE IT IS!

At last Victor has found a way to give you a plate with a standard 5/16" clinched nut and the full quarter inch of machine thread gripping power and strength you've come to expect from Victor plates. Yet, amazingly enough, Victor has been able to reduce the quantity price to only 2c through the use of an exclusive new "Lucky Clover Leaf" embossed design and a newly engineered method of attaching the nut, itself.

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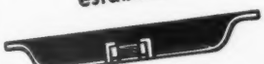
2c (TWO CENT) 2c
Victor CLINCHED NUT PLATE
with full machined 5/16" nut

CLOVERLEAF EMBOSSING FOR STRENGTH so you can use this money saving plate for all but the heaviest upholstered furniture. Newly engineered nut attachment is stronger than ever.

AMERICAN-MADE QUALITY AND SERVICE. You can still save with our "import" prices without sacrificing Victor's established advantages in quality and service.

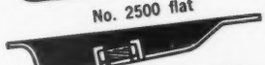
3000 plates or more	2c ea.
bags of 1000 plates	2½c ea.

less 5% discount for orders of 25,000 pieces or more



No. 2500 flat

PAT. PENDING



No. 2512 12° angle

Victor SUPPLY COMPANY "We lead, others follow."

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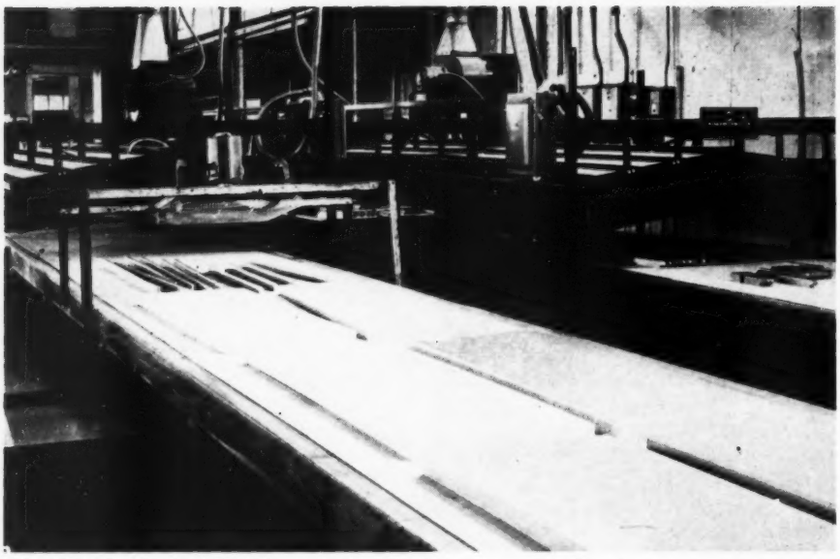

CONVEYORIZED FINISHING at Indiana Cabinet Co. includes these time-saving infrared drying units.

Drying Ovens Reduce Finishing Costs

Drying time for furniture parts was cut from two hours to eight minutes, according to an Indiana cabinet maker, with the installation of ceramic-type electric ovens.

L. J. Brelage, general manager of the Indiana Cabinet Company, Dubois, Indiana, said 14-foot "driQuik" ovens were integrated in two new conveyorized finishing lines which were set up in the plant recently, and have lowered production costs by eliminating a great deal of handling and rack space required for air drying. He said oven maintenance costs were negligible, since there are no bulbs, quartz tubes or sockets to burn out and need replacing.

Manufactured by the Dry Clime Lamp Corporation, Greensburg, Indiana, the driQuik oven has two temperature zones, each controlled by a cyclical timer capable of regulating temperature to within one degree of the desired heat, and set by turning a knob.

For most parts at Indiana Cabinet, the general manager said the oven drying the base coat is set at 25% of rated temperature capacity, and the one drying the grained finish is set at 35%. On the first finishing line, the parts pass through a roller coater which applies the base coat. Parts are then carried on the conveyor for a three-minute cooling-off period. The second finishing line is a duplicate of the first, except that the parts first pass through a horizontal graining machine. ■

"With IMA, these two men do the work of ten"

writes A. E. Starke
of Hanover Kitchens, Ltd.
Hanover, Ontario, Canada

". . . they are working shorter hours . . . they have cleaned up the terrific back log of material that required edge banding when the IMA went into operation," Mr. Starke says.

"The IMA edge bander has been running nine hours a day since we put it into operation which is almost five months now, and the only item that we have replaced to date is one of the heating bands."

IMA is the only straight-line, completely automatic production machine that applies veneer and plastic edge strips to particle board, plywood or lumber cores.

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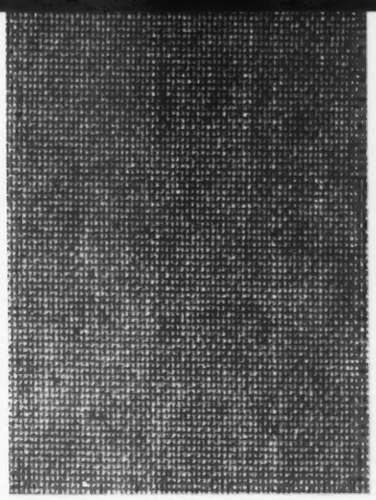
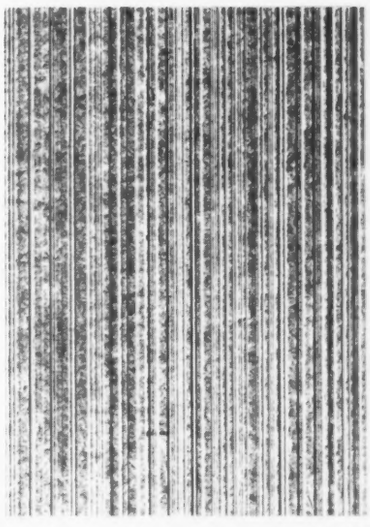
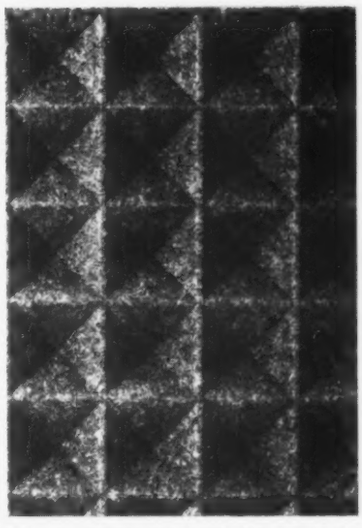


SCREEN-BACK HARDBOARD

SMOOTH-TWO-SIDE HARDBOARD



STRIATED PATTERN



EMBOSSED PATTERN

A special FDM reference section for your materials specifications file

PRE-FINISHED WOOD GRAIN HARDBOARD

HARDBOARD

STANDARDIZED, UP-TO-DATE FACTS YOU SHOULD KNOW ABOUT THIS MODERN BASIC MATERIAL

Uniform Nomenclature and Specifications for HARDBOARD

The standard reference developed by the technical committee of the

AMERICAN HARDBOARD ASSOCIATION

1. PURPOSE

1.1 This specification is offered for the common understanding of those concerned with the manufacture, sale, and use of hardboard. It classifies the stock types and thicknesses by definite criteria, providing the purchaser with a means of specifying hardboard which will be recognized by the manufacturer.

2. SCOPE

2.1 This specification arranges the classes of hardboards with regard to type, thickness and strength, and provides specifications for important properties. Test procedures, as well as information on sizes, dimensional tolerances, and special hardboards are included. Hardboard as a material of commerce is defined.

3. DEFINITIONS AND CLASSES

3.1 Hardboard is a board material manufactured from wood or other lignocellulosic fibers, refined or partly refined and felted into a panel having a density range of approximately 50 to 80 pounds per cubic foot under carefully controlled optimum combinations of consolidating pressure, heat and moisture so that the board produced has a characteristic natural ligneous bond. Other materials may be added during manufacture to improve certain properties.

3.2 Types—Hardboards are of two types, standard (Type I) and tempered or treated (Type II).

3.2.1 Type I—STANDARD HARDBOARD.—This type of hardboard is in substantially the same form as it comes from the manufacturing press, except for minor processing steps such as humidification to adjust moisture content, and trimming to size.

3.2.2 Type II—TEMPERED OR TREATED HARDBOARD.—This type of hardboard is manufactured by a supplemental operaton of impregnating a hardboard with siccative materials such as drying oil blends of oxidizing resin which are stabilized by baking or other heating after impregnation. Tempered hardboard is characterized by improved strength properties, lower rate of water absorption and increased abrasion resistance.

3.3 *CLASSES.*—Standard hardboards (Type I) are divided into two classes, primarily on the basis of their strength. Tempered or treated hardboards (Type II) are not divided into classes.

3.3.1 Type I, Class 1.—This is standard hardboard of intermediate strength and in most cases falls in a density range of 60 to 75 pounds per cubic foot.

3.3.2 Type I, Class 2.—This is standard hardboard of moderate strength somewhat less than that of Class 1. In most cases its density falls in a range of 50 to 60 pounds per cubic foot.

3.4 SURFACE.—Hardboards are separated by surface into screen-back (S1S) and smooth-two-side (S2S) hardboards. Screen-back boards are also known as smooth-one-side.

3.4.1 SCREEN-BACK HARDBOARD (S1S).—Hardboard with a reverse impression of a screen on the back produced when a damp or wet mat is hot-pressed into a hardboard and dried in the press.

3.4.2 SMOOTH-TWO-SIDE HARDBOARD (S2S).—Hardboard produced from a substantially dry mat pressed between two smooth hot platens.

4. GENERAL REQUIREMENTS

4.1 Hardboards shall be manufactured in accordance with the process description of paragraphs 3.1, 3.2, 3.2.1 and 3.2.2.

5. DETAIL REQUIREMENTS

5.1 The thickness, strength and water resistance of hardboards shall conform with the specifications shown in Table 1 (See opposite page).

5.2 Hardboard shall be manufactured and inspected so that its surface is acceptable for the uses generally employed for the particular types and classes. Surface characteristics which are inspected shall include blisters, scratches, depressions and discoloration. Depending on the general use of each type and class, minor surface imperfections shall be allowed. S2S board surface quality is normally guaranteed one side only.

6. TYPES MANUFACTURED AND USES

6.1 Hardboard is manufactured in standard types and classes as shown in Table 1; and in numerous special types designed to meet particular requirements for special applications. Some of these special types which are generally available are described in "7. SPECIAL HARDBOARDS."

6.2 Standard hardboard of intermediate strength (Type I, Class 1) is generally suitable for applications where moderate water resistance and good strength are needed, such as drawer bottoms and cabinet work.

6.3 Standard hardboard of moderate strength (Type I, Class 2) is generally suitable for applications where water resistance and strength are not critical, such as wall and ceiling panels.

6.4 Tempered or treated hardboard (Type II) is generally suitable for applications where high strength, harder surface and superior water resistance are needed such as wearing surfaces, storage bins and durable toys.

7. SPECIAL HARDBOARDS

7.1 Hardboard is available from manufacturers in a variety of special types especially designed for such purposes as convenience of application, decorative effect, and particular engineering requirements. Requests for hardboard to meet unusual requirements should be submitted directly to the manufacturer. A number of special products which generally are available from one or more manufacturers are described below.

7.2 PLANED STANDARD HARDBOARD.—A standard hardboard 1/4" or less in thickness meeting strength

requirements of Type I, Class 2 which may be planed or sanded on one side to a thickness of not less than 0.210" nor more than 0.220" primarily for use as an underlay panel over which linoleum, asphalt tile, plastic tile and similar floor surface materials may be applied.

7.3 TILE PATTERN.–A Type II S2S hardboard having pressed or mechanically scored grooves, usually spaced 4" on center each way, forming 4" squares on one surface. Usually made in 1/8" and 3/16" thicknesses.

7.4 EMBOSSED PATTERNS.–Type I or Type II hardboards which have an embossed pattern pressed into one surface. Among the patterns available are leather, wood grain, and basket weave.

7.5 STRIATED PATTERN.–A Type II hardboard to which a striated surface similar to combed wood has been applied, either by pressing or by machining after pressing.

7.6 SIDING.–Certain hardboards (usually Type II) can be used for exterior siding on buildings. Also, there are hardboards specially manufactured for this purpose. These are available in strips 10" or wider and in lengths up to 16' for application as lap siding, and in panels 4' wide and up to 16' long for application as panel siding. Lap siding may have an integral or separate wood shadow strip and may be installed by nailing or it may be edge slotted for mounting on a metal shadow strip or fixture and installed with hidden nailing. Panel siding may be plain or have a surface pattern such as longitudinal grooves or raised ribs for decorative purposes along with machined edges to provide shiplap joints.

7.7 PERFORATED HARDBOARD.–A Type I or Type II hardboard with closely spaced factory punched or drilled holes, which may be used with various fixtures to provide flexible and decorative wall mounting and storage facilities.

7.8 DECORATIVE PRINTED OR PREFINISHED HARDBOARD.–A Type I or Type II hardboard with wood grain or other coating applied in the factory. May be grooved.

7.9 CONCRETE FORM HARDBOARD.–A Type II hardboard which has been given additional processing to provide maximum performance when used as panels and liners in concrete form work. Usually made in 1/4" thickness.

7.10 DECORATIVE LAMINATE CORES.–A Type I hardboard manufactured to provide a core for high pressure decorative laminates. Characterized by a high perpendicular tensile strength and a smooth surface. Is usually sanded or planed for uniform thickness.

8. METHODS OF SAMPLING AND TESTS

8.1 Methods of sampling and test shall be in conformance with Test Procedures of the American Hardboard Association.

9. STANDARD SIZES AND TOLERANCES

9.1 SIZES.–Hardboard is commercially available in widths of 4'-0" with the exception of smooth-two-side board of 1/8", 3/16" and 1/4" thickness, all of which are available in 4'-0" and 5'-0" widths. Standard lengths are 4'-0", 6'-0", 8'-0", 12'-0", and 16'-0". Intermediate lengths are also available, ordinarily when on inventory.

9.2 DIMENSIONAL TOLERANCE.–Length and/or width shall not vary more than plus or minus 1/16" from the ordered size. Boards shall be square within 1/64" per foot of lineal length or width.

10. METHOD OF ORDERING

10.1 When ordering, customers shall specify the type, class, thickness, S1S or S2S, and size desired.

Illustrations of hardboard types courtesy of: Bowater Board Co., Edward Hines Lumber Co. and Marlite Division of Masonite Corp. Text and chart supplied by the American Hardboard Association.

TABLE I–DETAIL REQUIREMENTS

CLASSIFICATION		SURFACE	NOMINAL THICKNESS	THICKNESS TOLERANCE	MODULUS OF RUPTURE MINIMUM	TENSILE *STRENGTH ∥ MINIMUM	TENSILE *STRENGTH ⊥ MINIMUM	WATER RESISTANCE WATER ABSORP. MAX.	WATER RESISTANCE SWELLING MAX.
			INCH	INCH	PSI	PSI	PSI	%	%
TYPE 1 STANDARD	Class 1	S1S	1/12	0.070-0.090	5000	2500	100	43	30
			1/10	0.090-0.110				25	22
			1/8	0.113-0.155				20	18
			3/16	0.170-0.205				18	14
			1/4	0.225-0.265				16	12
			5/16	0.290-0.335				14	10
		S2S	1/10	0.090-0.110	5000	2500	100	30	25
			1/8	0.115-0.155				25	18
			3/16	0.170-0.205				25	15
			1/4	0.225-0.265				18	14
			3/8	0.350-0.400				12	10
	Class 2	S1S	3/16	0.170-0.205	3000	1500	50	25	15
			1/4	0.225-0.265				25	15
			3/8	0.350-0.400				25	15
		S2S	1/8	0.115-0.155	3000	1500	50	30	25
			3/16	0.170-0.205				27	22
			7/32	0.205-0.250				27	20
			1/4	0.225-0.265				27	25
TYPE 2 TEMPERED OR TREATED		S1S	1/8	0.115-0.155	7000	3500	150	15	15
			3/16	0.170-0.205				12	10
			1/4	0.225-0.265				10	8
			5/16	0.290-0.335				8	6
		S2S	1/8	0.115-0.155	7000	3500	150	15	15
			3/16	0.170-0.205				15	12
			1/4	0.225-0.265				12	12

* NOTE: ∥ PARALLEL TO SURFACE; ⊥ PERPENDICULAR TO SURFACE

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AIR TOOLS SPEED UP

FROM PAGE 49

Line family, an air stapler with a long, tapered nose, is called the "ASLN." This is a direct-drive, pneumatic stapling machine designed for fastening springs and spring constructions in sofa beds, sofas, chairs, and box springs.

The tapered nose of the ASLN enables an operator to reach into hard-to-get-at places, and the nose has a slot at the bottom to grasp and adjust the spring or border wire to the desired position. The stapler is so lightweight and maneuverable, it is said, that it is suitable for use by a woman operator.

The important function of automatic power fastening equipment for the attachment of hog rings is not forgotten by Power-Line. The company produces three portable air-operated hog ring machines of drop-jaw design for affixing such components as insulator pads, burlap, sisal, latex and synthetic foams, and curled hair to spring units. The machines are also being used with excellent results, says Power-Line, to construct button-free mattresses. Models are "2A" using ¾" rings; "2B" connecting with ½" rings; and "2C" which attaches 1¼" rings.

To round out its line of automatic power fastening equipment, Power-Line Sales offers stationary hog-ring machines, operated by foot valves, for the tieing of muslin-covered Marshall-type spring strips together, and for assembling such strips into complete cushion units. These machines, they say, increase production speed and give uniform, tight closures for the creation of spring units without overlapping coils.—*Leonard S. Simon.*

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INDEX TO ADVERTISERS

Abernathy Vise & Tool Co. 39
American Rattan & Reed Mfg. Co. 45
Arrowhead Associates, Inc. 9
Automatic Tubing Corp. 43
The Bassick Co., Div. of Stewart-Warner Corp. 20
Berger Tube Corp. 44
Blocksom & Company ..... Cover III
Bowater Board Company 7
F. Burkart Mfg. Co., a Division of Textron, Inc. 17
Burton-Dixie Corporation 27
Carr Fastener Co., Div. of United-Carr Fastener Co. ..... Cover II
J. B. Dawn Products Co. 46
The Denney Tag Co. 48
Duo-Fast 66
The Engineered Products Co. 47
Fastener Corporation 66
The Otto Gerdau Co. 46
B. F. Goodrich Company 10, 11
Grant Pulley & Hardware Corporation ..... Cover IV
Heinemann Saw Corporation 57
Walter E. Heller & Co., Inc. 3
Edward Hines Lumber Co. 21
Ingersoll-Rand Company 44
IXL Manufacturing Co. 47
Lundstrom Laboratories Inc. 55
Lyon Furniture Mercantile Agency 39
McMasters, Inc. 38
Robert E. Miller & Co., Inc. 42
North American Plywood Corp. 33
Ohio Rod Products Co. 45
Onsrud Machine Works, Inc. 50
Paslode Company 31
Pirelli Limited 25
Ply-Curves, Inc. 43
Rainbow Trading Co., Inc. 48
Selby Furniture Hardware Co. 39
Senco Products, Inc. 29
Carlton Smith Industries, Inc. 48
Spotnails, Inc. 53
Stanley Hardware Div. of The Stanley Works 41
Textile Banking Company 16
Tichnor Brothers, Inc. 46
Trend Industries 8
Turner & Seymour Mfg. Co. 49
E. W. Twitchell, Inc. 42
U. S. Rubber Co. 19
Victor Supply Co. 59
Wilco Machine Works, Inc. 60
Wilkenson Manufacturing Co. 33
Williams-Brownell, Inc. 48

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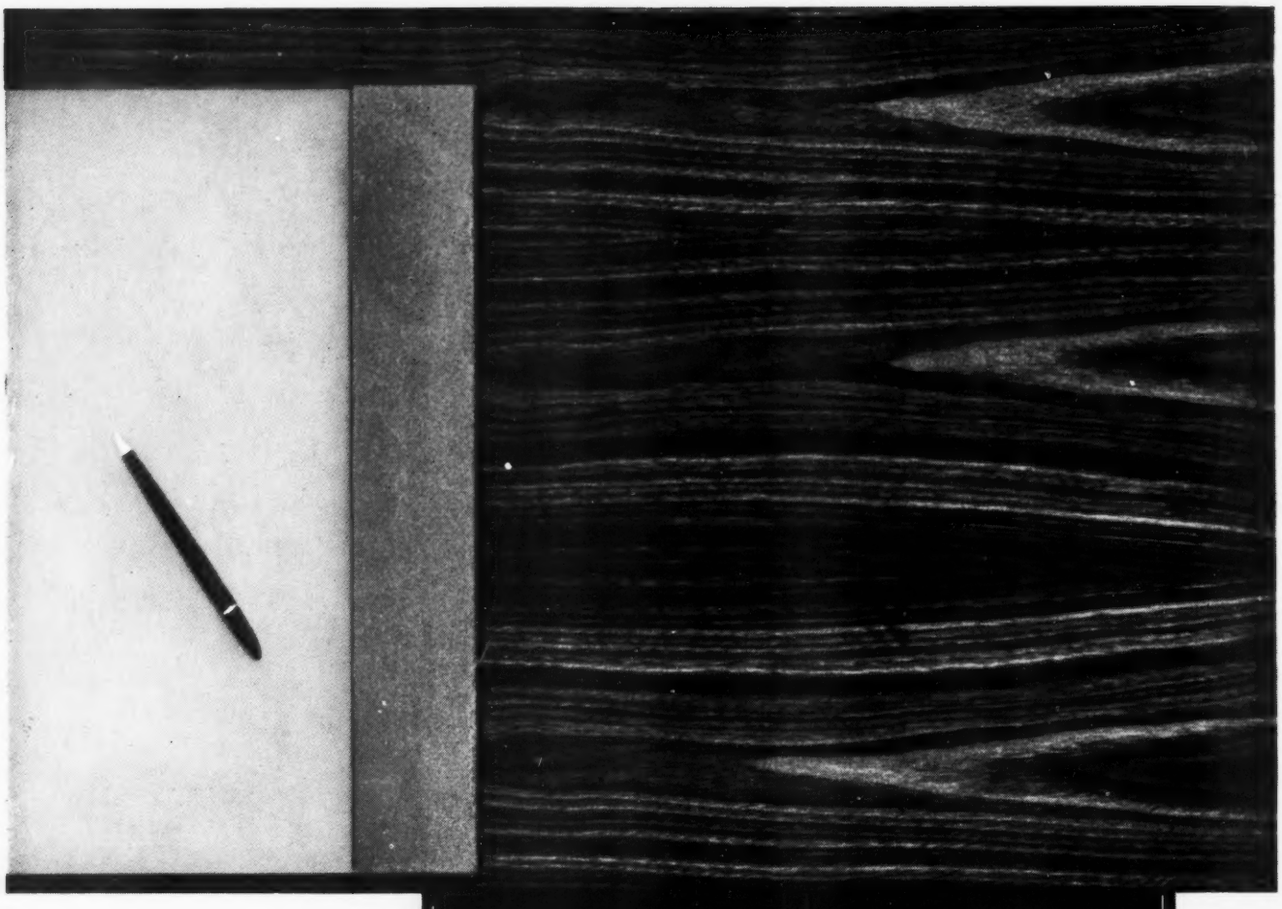

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